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DODGING FLYING FISHES.

See page 253.

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FISH STORIES

ALLEGED AND EXPERIENCED

WITH

A LITTLE HISTORY NATURAL AND
UNNATURAL

BY

CHARLES FREDERICK HOLDER

Author of "The Log of a Sea Angler,"

"Life of Charles Darwin," etc.

AND

DAVID STARR JORDAN

President of Stanford University

ILLUSTRATED



NEW YORK

HENRY HOLT AND COMPANY

1909

500,000
500,000
500,000

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Published February, 1909

THE QUINN & BODEN CO. PRESS
RAHWAY, N. J.

PREFATORY NOTE

A FISH story needs no apology ; and no affidavit nor string of affidavits can add anything to its credibility. The highest authorities in ethics have indicated the angler's privileges. It is agreed that " It is better to lie about your great catch of trout, than to make it." Furthermore, the greatest authorities in science agree that the trout lies in the bottom of the stream, even as the truth lies at the bottom of a well. It is therefore fitting that men should lie about the trout.

"Tusitala," the one who talks lengthwise, is the Kava-name of the greatest of modern story-tellers. "Talinoa i faiva," one who tells fish-stories, is the more modest Kava-name given likewise in Samoa to one of the authors of this book. But for reasons which will appear, it would be more appropriately bestowed on his present associate.

In further evidence of the truth of the tales here set forth, we may only note that both authors are Californians. Those interested in distinguishing the work of the individual authors may apply the well-known rules of the Higher Criticism,

D. S. J.

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FISH STORIES

“Time is but the stream I go a-fishing in. I drink at it, but while I drink, I see the sandy bottom and detect how shallow it is. Its thin current glides away . . . I would drink deeper, fish in the sky whose bottom is pebbly with stars.”—*Thoreau*.

CHAPTER I

ANCIENT ANGLERS AND THEIR LITERATURE*



WHO was the first angler, how he fished, and whether he was an honest spinner of yarns, are questions of high import, doubtless never to be answered. The first fish story was told very long ago, for, in all probability, the first men were anglers.

In many of the implement collections, fish hooks are found, and stones which were intended as sinkers. The present writer has taken many hooks and other angling tools from the old mounds on the Southern California islands. The lines were made from the long "bull kelp," with hooks of abalone shell. Nearly all have the barb on the outside, which suggests that Andrew Lang is incorrect in imputing to Maui, the Maori hero, the discovery of the barb, which many honest anglers of to-day file away.

Bone hooks are taken from shell deposits on the Florida coast. Bronze hooks have been found in Ireland, and the famous Limerick hook is said to have been modeled after them.

The oldest races known to man were skilful anglers, and caught fishes with hooks. Some of the best stories of the day were, doubtless, invented by anglers, soulful and conscienceless, tens of thousands of years before they were handed down to us. Even Aelian refers to artificial May flies, which were used by the Illyrians. Pictures of fishermen are seen on ancient bas-reliefs. At Santa Catalina

* The common and scientific names of all fishes referred to in this volume will be found in the Appendix.

Island was found a fish-hook manufactory, with hooks in various stages, with the tools, showing that these ancient islanders bored holes in pieces of abalone and broke off the rim to form the hooks.

Doubtless we took our love of fishing from some remote Simian ancestor, if we are to believe one of the ancient writers, who carefully describes monkeys in Africa holding a bait in their prehensile tails, using the latter as a rod. There is one weak point about this: the African monkeys nowadays have no tails to speak of, and the tails they have, are not prehensile; true, the fishes may have bitten them off. The nature writer of the last century tells us that the jaguar waves its tail in the water to attract fishes. According to Uncle Remus, it was through such acts as this that the rabbit lost his long bushy tail. Whether the jaguar used a sinker, or what the bait was, is not given, but the honest angler perhaps asks too much in pressing these points.

There are many references to fishing in the Bible, and the fondness of Jesus for fishermen is well known. "I go a-fishing" is Biblical, not Shakespearian, and from the miraculous draught, to the catch of Tobias, the Bible contains reference to fishing. The greatest fish story in the world, the experience of Jonah, is found in the Bible; also in Greek, Egyptian and Babylonian mythology. True, the whale is not a fish, but, on the other hand, the Higher Criticism assures us that the fish in question was not a whale. Linnæus tells us that it was the great white shark. Yet, doubtless, no fish story has been so widely circulated and universally believed as this. The good people of the ages have accepted it without question. Once in a while, it is true, some misguided scientist with an atrophied imagination rises, and attempts to show that the throat of a whale is too small to swallow a man, that a shark is too vicious to swallow him whole, and that in either case, he would be smothered in ten seconds; but such persons are swept aside by the splendid faith of millions, who have had this fish story from their

forefathers, and who have prided themselves on their power to reduce Oriental imagery to plain terms of every-day life. Jonah's experience with the whale is often cited as an illustration to point a moral, and no true angler will dispute this; but to the angling fraternity, the incident brings home the fact that the essence of angling is faith, and faith is a sort of second cousin to patience. Hence it may be, that Jonah is really the father of the modern fish story, and he stands without rival or peer.

But passing hastily from the realms of Oriental poetry and the higher criticism, we may note that Shakespeare delights in references to the angler and his catch. In Antony and Cleopatra occurs the basis of a fish story which has been told again and again, and the joke of Cleopatra has been tried many times upon innocent anglers of to-day. It is said that Antony claimed to be a skilful angler, and that Cleopatra hired a diver to dive down and fasten a dried red herring upon his hook and jerk the line. This was carried out to the letter, and when Antony landed the extraordinary fish, Cleopatra laughed. But Antony rallied, and remarked that it was not much of a catch perhaps, but still it had merit, in being the *oldest* fish ever taken on hook and line.

The one classic which stands out clearly in ten thousand or more books of angling, is Izaak Walton's "Compleat Angler," the most perfect combination of wit, nature, philosophy and good humor, the best argument in favor of angling as a diversion, ever made. Yet we are told that the inimitable Walton was a pirate; that he stole from others. This may be true, indeed the lines:

"Gent. Well overtaken, sir Scholar. You are welcome, gentlemen," is taken boldly and bravely from a work entitled "A Treatise of the Nature of God," London, 1599. If this be plagiarism, and it looks like highway robbery or piracy, spiteful critics may make the most of it: the literature of angling needs more of it. In truth, Walton helped himself to everything at hand, as others had done before

him, and the result sets a stamp upon his genius, and the fact that he borrowed from his predecessors has made them famous. Walton dallied with "The Treatyse of Fysshynge wyth an angle," 1496, which is, perhaps, the earliest known work on fishing. Its alleged author was a woman, Dame Juliana Berners. Among other old books from which Walton borrowed is "The Book of Fishing with Hooke and Line," 1609, by Leonard Mascall, another pirate who stole from the older treatises; and in the "Compleat Angler" there are references from "Aquatilium Historiæ," 1554; Rondelet's "De Piscibus," 1554; Aldrovandi's "De Piscibus," 1638; a similar book by Dubravius, 1559; Gerard's "Herball," 1633; "Historia Naturalis," by Gesner, 1558, and the other books by brave old story-tellers who would have left great names in science, had the fashion of testing experience, and setting it in order, been as well developed as in our day.

And so angling has gone on year by year, and nearly every fish story is hoary with age, and can be traced back deep into the past, when preadamites brought in their strings of fish, and as they gnawed the bones, dilated upon their several catches, and especially on the size, strength and game-ness of one fish that got away.

CHAPTER II

FISH STORIES OF THE FATHERS



THE ancient fish-story-tellers commend themselves to anglers of to-day. They stood not upon the order of telling, but gave their several relations with a broadness and circumstance at once attractive and admirable. There is no devious suggestion, no false modesty. If the account obtained from some ancient mariner was lacking in detail, the artist rose to the occasion, and filled it out, while the story-teller released his pent imagination and did the subject full, and copious, justice. So, all hail, Pliny, Olaus Magnus, and Bishop Pontoppidan! true members of the guild where fancy has no bounds, and the imagination no curb. Little wonder that the real fish stories of to-day are doubted, and the catches of the conscientious angler received with suspicion.

Pliny was a delightful *raconteur*, who fully believed in mermaids, and other strange half-fish folk of the sea. He tells us that a Lisbon deputation to the Emperor Tiberius, informed his Imperial Majesty that on their trip they had seen a Triton about a cave, blowing on a conch shell. The legates of Gaul spread upon the records, and gave the information to the Emperor Augustus, that in a heavy storm, numbers of Nereids had come ashore and been examined by the people. Distinguished authorities saw a merman in the "ocean of Gades." At night this creature came aboard a ship, and the voracious observers even described the effect of its weight upon the vessel.

The idea of a fish-man, merman and mermaid, is very

common in mythology. It doubtless arose from the imagination of some ancient who had seen a seal, or some similar animal, splashing about the surf. A fish-head god, Oannes, is mentioned by Berosus the Chaldean, who describes Oannes as being similar to the Greek Cronos. Clay representations of this god have been found at Khorsabad as well; and some of the most beautiful seals and gems of early times bear the picture of Oannes, or Hea. Berosus describes this fish-like man as follows:

“In the beginning there were in Babylon a great number of men of various races, who had colonized Chaldea. They lived without laws, after the manner of animals. But in the first year there appeared, coming out of the Erythrian Sea (Persian Gulf) on the coast where it borders Babylonia, an animal endowed with reason, named Oannes. He had all the body of a fish, but below the head of the fish, another head, which was that of a man; also the feet of a man, which came out of its fish's tail. He had a human voice, and its image is preserved to this day. This animal passed the daytime among men, taking no nourishment. It taught them the use of letters, of sciences, and of arts of every kind; the rules for the foundation of towns, and the building of temples, the principles of laws and geometry, the sowing of seeds, and the harvest; in one word, it gave to men all that conduced to the enjoyment of life. Since that time, nothing excellent has been invented. At the time of sunset, this monster Oannes, threw itself into the sea, and passed the night beneath the waves, for he was amphibious. He wrote a book upon the beginning of all things, and of civilization, which he left to mankind.”

Pictures of this god are found on the rocks at Nimroud, Helladice and Hyginus. Old writers tell the story again, but calling the fish god Oes and Euahanes. Alexander Polyhistor states that similar figures were to be seen in the temple of Belus at Babylon. When the palace of Khorsabad was excavated, the story of the expedition of Sargon, the

father of Sennacherib, was discovered. He was an adventurous mariner (B. C. 720) who made a trip to Cyprus, during which he threw overboard wooden gods, among which was Hea. These were to invoke good luck; and Ashton suggests that they were the first representations of mermen.

Hindoo mythology is particularly rich in its reference to fishes. Vishnu is seen in one of his *avatars*, or incarnations, coming out of the mouth of a fish, and so vivid are these myths, that they are the parent stock of many of the remarkable superstitions which hold among the toilers of the sea to-day.

Aelian, with vivid imagination, described the inhabitants of the sea about the island of Taprobana (Ceylon), and described cetaceans in the form of satyrs. Gesner shows an illustration of an interesting animal of this type, which he claims was exhibited in Rome on the third of November, 1523. Mermen, made up of the dried head and torso of a monkey, joined to the body of a fish, have been made for centuries in China, and are often seen in "curiosity" shops. The writer once saw one of these mermaids in a tank at Santa Monica, California, and most of those who paid to see it took it for a genuine beast. It is told that Linnæus was once driven out of a town in Holland, forced to escape by night, because he had expressed doubt as to a mermaid of this sort, the pride of the good mayor of the city.

The clergy have been responsible for some good fish stories, ancient and modern. Chaplain Valentyn, a Dutchman, in his history of Amboyna, 1663, a book on the whole excellent and accurate, describes certain mermen seen in that country. He refers to their long gray, and green, flowing hair, which was observed by fifty people. Several mermen were caught on the island of Amboyna, and a district visitor to the church made a portrait of one, which he presented to the governor. This is sufficient to disarm the most captious critic. Valentyn also tells us that a fair dame, with the tail

of a fish, was caught in a storm at Edam, Holland, in 1404. She was converted to Christianity, and died a good Catholic many years after, all of which is very delightful to contemplate.

Among all the fish story-tellers of the olden times, Olaus Magnus rose most completely to the occasion. Discussing "The Horrible Monsters of the Coast of Norway," what could be more striking than this? "Their forms are horrible, their heads square, all set with prickles, and they have sharp long horns round about, like a tree rooted up by the roots; they are ten or twelve Cubits long, very black and with huge eyes, the Compass whereof (i. e., of the fish), is above eight or ten Cubits: the apple of the eye is of one Cubit, and is red and fiery coloured, which in the dark night appears to Fisher-men afar off under Waters, as a burning Fire, having hairs like Goose-Feathers, thick and long, like a beard hanging down the rest of the body, for the greatness of the head, which is square, is very small, not being above fourteen or fifteen Cubits long. One of these Sea Monsters will drown easily, many great ships, provided with strong Marriners."

An excellent cut of this monster is given, and it is interesting to note the body of a whale, the tentacles of the big squid, or cuttle fish, and the head of a hair-seal.

Another fish known to Olaus Magnus, suggests the attributes of a fire-engine. It was two hundred cubits long and very cruel. It had an extraordinary habit of standing on its tail high above the yards, and spouting, in vast floods above its head, water which had previously been sucked in. A school of these living water towers, says Magnus, "would easily destroy a fleet, or," at least "expose the Marriners to extream danger."

Olaus Magnus, however, gives us the remedy for the attack of this animal: "A Trumpet of War is the fit remedy against him, by reason of the sharp noise, which he cannot endure. Sometimes," says Olaus, "not content to do hurt by water only, he will cruelly overthrow the ship." The ac-

companying illustrations show this in perfect detail, represented with an exuberance of fancy—fascinating in the extreme. In the first picture we see the ship and the monster spouting water high in the air; and on the quarter-deck, the skipper blowing his war horn, while the men are tossing over barrels of provisions to appease the monster. In the next picture, the great fish, or whale, is seen coming aboard, as the gallant ship goes down.

A favorite tale of Olaus Magnus is of a gigantic fish or whale which was so huge that ships' crews took it for an island, landed, and did not discover their mistake until they built a fire, and the animal, rudely awakened, dropped away from them. Doubtless this was taken from the Arabian Tales, as this story, or one like it, appears in Sinbad. Gesner tells the same, but Olaus Magnus was an artist. He so paints the picture, that it has all the elements of plausibility. Gesner tells us that the men landed on the huge fish and took its skin for the land; but Olaus Magnus states that the fish in swimming near the bottom, covered it with sand to such a depth, that mariners cast their anchors in it, supposing it to be the bottom. "The Whale hath upon its Skin a superficies, like the gravel that is by the sea side; so that oft times when he raiseth his back above the water, Sailors take it to be nothing else but an Island, and sayl unto it, and go down upon it, and they strike in piles upon it, and fasten them to their ships: they kindl fires to biyl their meat; until at length the Whale feeling the fire, dives down to the botome; and such as are upon his back, unless they can save themselves by ropes thrown forth of the ship, are drown'd."

When a young whale runs aground it might seem difficult to haul it off, but not to Magnus: "When for want of water their young are hindered, that they cannot follow their Dams, the Dams take water in their mouth, and cast it to them like a river, that she may so free them from the Land they are fast upon."

The boundless nature of the imagination of Olaus Magnus

is shown in his estimates of the size of fishes or whales: "Some are hairy, and of four Acres in bigness." Few short sentences in any language, present such stupendous facts; and when Magnus reaches the eye, he is magnificent: "His eyes are so large, that fifteen men may sit in the room of each of them, and sometimes twenty, or more, as the beast is in quantity." Magnus doubtless had heard of the narwhal, as he says: "His horns are 6 or 7 foot long, and he hath 250 upon each eye. . . . These grow together, to defend his eyes in tempestuous weather."

In most of these old tales there is some element of truth; usually a naturalist can tell at a glance the real animal which set going the imagination of the artist. Sometimes a remarkable tale turns out to be literally true. It is said that the late Professor Shaler of Harvard used to discuss the phenomena of earthquakes by beginning an account of the most severe of these within his experience.

"I was riding on the back of a whale, when I was thrown down by a sudden jar," etc. It transpired that he had climbed on the back of a dead whale stranded on the Labrador coast, when the great shaking of the earth began.

Among the game fishes of these days were the Monk- and Bishop-fish, descriptions of which are left to posterity by Gesner and Aldrovandus. The Monk-fish is pictured in a book by Sluper, who says:

"La Mer poissons en abondance apporte,
Par dons divins que devons estimer.
Mais fort estrange est le Moyne de Mer,
Que est ainsi que ce pourtrait le porte."

The Bishop-fish is particularly described by Du Bartas:

"The mytred Bishop, and the cowl'd Fryer."

In Rondelet's excellent book (1558), "*Histoire Entière des Poissons*," many mythological creatures appear. Two of his plates are here reproduced. Of one of these, the

Monk-fish ("Le Monstre marine en habit de Moine"), Rondelet says, "In our times in Norway, a sea monster has been taken after a great storm, to which, all that saw it, gave the name of monk, for it had a man's face, rude and ungracious, the head shorn and smooth. On the shoulders, like the cloak of a monk, were two long fins instead of arms, and the end of the body was finished by a long tail. The picture I present was given me by that very illustrious lady, Margaret de Valois, queen of Navarre, who received it from a gentleman, who gave a similar one to the emperor, Charles V., then in Spain. This gentleman said that he had seen the monster as the portrait shows it, in Norway, thrown by the waves and tempests on the beach at a place called Dieze, near the town called Dinelopoch."

Of the Bishop-fish ("Monstre marine en habit d'Evêque"), Rondelet says: "I have seen the portrait of another sea monster at Rome, whither it had been sent with letters that affirmed that in 1531, one had seen this monster in a bishop's garb as here portrayed, in Poland. Carried to the King of that country, it made certain signs that it had a great desire to return to the sea. Being taken thither, it threw itself instantly into the water."

Stow, an able writer whose imagination and credulity went hand in hand, tells us that in 1187 some fishermen near Orforde in Suffolke, caught a fish which had the form of a man in all parts. It was kept (note the particulars), by Bartholomew de Glanville, custodian of the Castle of Orforde, for six months, but, says Stow regretfully: "He spake not a word. They took him to the church often, but he showed no tokens of adoration."

At this time, writers and the people at large believed that the sea contained prototypes of all the animals on land. Thus, if a returned adventurer told of a fish called the "sea cow," in foreign seas, the artist would picture a fish part cow; and so on, through all the animal kingdom. In referring to the sea horse, Gesner states that it is the class-

ical horse of Neptune; but Magnus rises superior to this, and gives the sea horse of Norway the head of a horse and the cloven feet of a cow, a forked tail of a fish and the body of a sea serpent; and there is a good picture of it to prove the accuracy of the description.

One of the largest fishes of the German Ocean was the Sea Pig, which Magnus describes, and figures. Here is a description of a specimen found in 1537: "For it had a Hog's head, and a quarter of a circle, like the Moon, in the hinder part of its head, four feet like a Dragon's, two eyes on both sides in his Loyns, and a third in his belly, inclining towards his Navel; behind, he had a forked Tail, like the other fish commonly."

The same writer gives an excellent description of the northern orca, or great killer, calling it the Ziphius: "He hath as ugly a head as an Owl: his mouth is wondrous deep, as a vast pit, whereby he terrifies, and drives away those that look into it. His Eyes are horrible, his Back Wedge-fashion, or elevated like a Sword; his snout is pointed."

Thus far we have the orca, but he now evidently branches off on the swordfish: "These often enter upon the Northern Coasts as Thieves and hurtful Guests, that are always doing mischief to ships they meet, by boring holes in them, and sinking them." Magnus tells a story of the sawfish which sawed open the bottom of a ship, sucked out the crew and devoured them. Referring again to the orca, Magnus says: "I, myself, saw one of the boats sunk by the water which the animal, as it respired, showered down upon it."

The confusion of orca, swordfish, sawfish and thrasher is common down to our day. The great killer frequently attacks whales, which leap out of the water and plunge furiously to escape from their tormentors. This we have seen several times off the coasts of California and Mexico. It seems to be the sole basis of the legend that swordfish and the thrasher-shark fight whales in company. "The thrasher poundeth from above like a flail, and the swordfish

pricketh from below." In place of this is the sufficiently savage truth that the orca, or great killer, plunges and tears like a fierce aquatic bulldog.

Pliny has left a number of interesting fish stories. It was he who stated that the dolphin is not only friendly to man, but a lover of music, being particularly fond (as it should be) of the water organ. Pliny knew more about dolphins than any of his time, and he refers to them with a confidence which admits of no questioning. Speaking of the intelligence of dolphins, he tells us of one which was placed in the lake of Lucrine during the reign of the Emperor Augustus. The animal formed so warm a friendship for a child that it came to the shore always to meet it; ate from its hand, presenting its back for the child to mount, and carrying it about the lake. We are given minute particulars in this story, so that we know it was not the cetacean or porpoise (*Delphinus*), commonly called dolphin, but a creature with a spinous dorsal fin like a fish. Pliny says: "After feeding from his hand, the dolphin would present his back for him to mount, taking care to conceal the spiny projection of his fins in their sheath, as it were; and so, sportively taking him upon his back, he would carry him over a wide expanse of sea to the school at Puteoli, and in a similar manner bring him back again." Finally, Pliny states, the child died, and the dolphin gradually pined away, "dying purely of sorrow or regret." There is a fish called dolphin by fishermen of our day, but this was not known to Pliny, and the use of the name dolphin for it, is one of the eccentricities of English nomenclature.

Another dolphin on the African coast is quoted by this illustrious author as being very friendly with men, bearing them upon its back. This dolphin did not die of remorse, but was put to death. "At last the vexations that were caused them, by having to entertain so many influential men who came to see this sight, compelled the people of Hippo to put the animal to death." Evidently these people had not

learned the art of making the tourist trade useful in building up their fortunes.

Hegesidemus tells of a boy, named Hermias, who lived on the island of Iasus, who traversed the sea on the back of a friendly dolphin. One day, during these travels, a storm arose, and Hermias was washed off and drowned, whereupon the dolphin, realizing that it was in fault, "lay down on dry land and there expired."

Sir John Mandeville was a famous story-teller of his time, and in speaking of the kingdom of Talonach, said: "And that land hathe a marvale, that is in no other land, for all manner of fyshes of the sea cometh there once a yeare, one after the other, and lyeth him neere the lande, sometime on the lande."

Marco Polo also told fish stories, fishes that appeared in a convent stream only in Lent, and always on the fast days, a matter of great convenience to the brothers. Equally remarkable is the story of Edward Webbe, 1590, who describes a stream in Syria in which the fish will not bite the lure of a Jew, though a Christian, or a Turk, can take them with ease. But, perhaps in this case, we have heard but two or three sides of the story.

Pliny tells us the ancient story of the remora, which interferes with ships. It held back the ships at the battle of Actium, and Mucianus stopped a ship, which was carrying off a lot of children to be mutilated by Periander.

John Hance of Bright Angel, who needs no further introduction to any one who has visited the Grand Cañon of the Colorado, likes to tell this tale of his experience in angling in a bend of the river just below (a mile below as the crow flies) the hotel at Grand View. There is in the Colorado a large chub, a bony toothless fish, the squaw-fish, which, although it is a chub or minnow, reaches a very large size, ten or twelve pounds at least. It will bite freely at a hook baited with a worm or a grasshopper.

One summer day Hance was deep in the cañon, fishing

for this fish, which is locally known as salmon. It was very hot on the sands in the river bend, so he crawled back among the mesquit bushes, and tied the line to his leg. In the shade he soon went to sleep. A big "salmon" took the hook and pulled him down to the river. Finally it jerked him in. He swam down the swift current until he finally saw that the fish was heading for deep water with intent to drown him. Realizing this, but wishing to save his line though he must lose his hook, Hance swam hand over hand down to the fish, drew out his knife, cut off the line close to the fish, gave the beast a kick in the jaw and then clambered back to the bank. The fish got away, but Hance lived to tell this, and some other tales.

CHAPTER III

THE OLDEST OF FISHERMEN

O born beneath the Fishes' sign,
Of constellations happiest!

—LOWELL.



LONG before St. Peter walked on the Lake of Tiberias, long before he and his associates made a miraculous draught of fishes, long before the days of Simon and Andrew and Jonah and Noah, lived the first of all fishermen. He was old when time was young, and he lived before the reign of the first Mikado, and that is more than twenty-five centuries ago.

There were gods in those days and demigods and blockheads and Japanese, and the first fisherman was all of these. His name was Ebisu (pronounced Aybees, the u being just as nearly silent as you can make it, just like the final e in the French word *quelque*). The father of Ebisu was a demigod named Oanamuchi, and he lived by the mighty sea, while outside was a solitary island with its mountain top hidden in the mists. Maybe this island was Oshima, in which case I could point you the very spot where Ebisu was born.

But Ebisu was not only a demigod, at least a quarter god, but he was a blockhead. A barbarian perhaps is a more exact statement, for the name Ebisu indicates an outsider, and it is spelled in Chinese ideographs by a sign of a bow and arrow, so blockhead may have meant woodsman or one possessing the craft of outdoor things.

In any event, Ebisu was banished to Oshima or some other mist-covered island, that he might die of starvation. He went fishing instead, and wandered barefoot all day long



EBISU, THE FISH GOD OF JAPAN, HAVING A RED TAIL.

up and down the sandy shores of Oshima. At last, his mother took pity on him and whispered through the soft warm wind of the Kuroshiwo, "Fish, fish, my son, by fishing shalt thou live. By fishing shalt thou be made a man." So angling made a man of Ebisu, as it has helped to make one of you and me. And the seas were ripe for his hook and his net. His catch was boundless. No one could do so well as he. And men called him the fish god. But living on fish alone, he thirsted for rice; for raw fish and cooked rice go together to make a meal in Japan.

And so he carried his fishes inland to the lands which know not the sea. And there he met Daikoku, the smiling god of luck, sitting high on his bags of rice. Ebisu had a red tai, or snapper (*Pagrus major*), under his arm, and Daikoku gave him a bag of rice for it. Thus they became the twin gods of trade, as no one before them had ever thought of such a thing, and because both made by the bargain, they were both in luck. And so they became the twin luck-gods of Japan, the god of fisherman's luck and the luck of commerce. And the red tai ever since, by the same token, has been the national fish of Japan.

But one day, so the story tells, and I do not see what this has to do with the story, but it is in the record, smiling Daikoku came to visit Ebisu. But Ebisu was gone a-fishing. Suddenly a huge giant faced Daikoku and challenged him to a wrestling match. Daikoku, short-legged, good-natured, trembled and smiled. This smile won the heart of the giant, and he, too, like a genuine Japanese, broke out in an answering smile.

Soon Ebisu returned, his great basket heavy with fish, and without warning, the giant turned suddenly evil again and rushed upon him. But Ebisu had not fought in vain with tuna and tarpon and mighty sharks. He forced the giant into the air, whence he fled in a dark cloud. And Ebisu and Daikoku sat down to a fish dinner, the like of which was not known then or since. The red tai is the best fish for a

banquet, for it is always to be had, and always in good flesh. And ever since that time Ebisu, who, with *Daikoku*, is now immortal, has gone about with a red tai under his arm. There is no knowing when he may need it, and whenever you see him, on a Japanese print or a Japanese Kakemono, or on the pages of this book, or on the advertisement of the beer called Yebisu, you will know him by the red tai which he carries.

And so it was, that when in the year 1900 A. D., the year 2550 since the birth of Ebisu, the writer came into Onomichi with a red tai under his arm and a basket filled with Umiuma (sea horses), Benisashi (Red Mullet), Beniteguri (dragons) and Kajika (sculpins), and paid more for these odds and ends and little freaks of the sea than real fishes were worth; when all this happened, people called me Ebisu, and said that the old fish-god was alive again. And with him was Daikoku, the god of luck, who paid all the bills in the coin of the realm: for it was a red-letter day in Onomichi, and a red-letter day for the collector of fishes, and a red-letter day, no doubt, for old Ebisu himself. For as Izaak Walton observed, and one cannot say it too often, "It is good luck to any man to be on the good side of the man that knows fish!" So here is long life to Ebisu!

CHAPTER IV

THE SEA SERPENT



OF all fish stories of the sea, the first place must be given to the accounts of the sea serpent in its protean forms. Even after eliminating the commercial sea serpents, developed by owners of seaside and lakeside resorts, and cutting out yarns deliberately concocted by fun-loving seamen, there is left a marvelous collection of stories, alarming, staggering and seemingly impossible to the timid dweller in the city flat, or the average traveler by sea.

Real sea serpents are small venomous snakes with oar-like tails, found in the gulfs and bays of the tropical Pacific, from the west coast of Mexico to the Indian Ocean. The eels, the large Conger, the various morays, are snake-like enough, and some of them are viciously savage; but these have little in common with the real sea serpent of popular ocean mythology, which is a huge snake-like beast, with a touch of the plesiosaurus, and a suggestion of the Chinese dragon.

The sea serpent is a beast of ancient lineage. It formed the basis of fish stories centuries ago. On the walls of the Assyrian palace at Khorsabad there is the figure of a sea serpent, which was seen by one Sargon on his trip to Cyprus two thousand six hundred years ago. Doubtless sea serpents of the largest size have played upon the imagination of man from the very earliest times. Aristotle tells of them on the coast of Libya, where they fed upon oxen and left the bones along the sands. Almost all of the old nature writers tried their hand at the sea serpent, and were all the

stories, ancient and modern, collected, a large volume would not contain them. Best of all, there are many modern instances in which the sea serpent has been observed by men whose word is beyond dispute. It is astonishing how easily good men may be deceived, in matters in which they have no technical knowledge, and in which they have had no training.

Of course, Olaus Magnus is prepared for the sea serpent. At one stroke of his pen, he creates a sea serpent, which in size, and appetite, has never been equaled. Listen:

“They who Work on Navigation, on the Coasts of *Norway*, employ themselves in fishing, or merchandise, do all agree in this strange Story, that there is a Serpent there, which is of a Vast Magnitude, namely 200 feet long, and moreover, 20 feet thick; and is wont to live in Rocks and Caves toward the Sea Coast about *Berge*; which will go alone from his holes on a clear night in Summer, and devour Calves, Lambs, and Hogs, or else he goes into the Sea to feed on Polypus, Locusts, and all sorts of Sea Crabs.

“He hath commonly hair hanging from his neck a cubit long, and sharp Scales, and is black, and he hath flaming shining eyes. This Snake disquiets the Skippers, and he puts up his head on high like a pillar, and catcheth away men, and he devours them; and this hapnath not, but it signifies some wonderful change of the Kingdom near at hand; namely, that the Princes shall die or be banished; or some Tumultuous Wars shall presently follow.”

“There is also another Serpent of an incredible magnitude in a town called *Moos*, of the Diocese of *Hammer*; which, as a comet portends a change in all the World, so, that portends a change in the Kingdom of *Norway*, as it was seen, *Anno* 1552, that lifts himself high above the Waters, and roulds himself round like a sphere. This Serpent was thought to be fifty Cubits long by conjecture, by sight afar off; there followed this the banishment of King *Christianus*,

and a great persecution of the Bishops; and it shew'd also the destruction of the Country."

Olaus Magnus has thus set the pace of sea-serpent stories for all time, and there is little room for the achievement of any later story-teller. Erik Pontoppidan, Bishop of Bergen, in his interesting work, "Natural History of Norway," gives, however, a graphic picture of the sea serpent, and several descriptions of the monster as observed by various mariners. Even Walter Scott, in his Notes, refers to it: "The Sea-Snake was also known, which, arising out of the depths of the ocean, stretches to the skies his enormous neck, covered with a mane like that of a war-horse, and with his broad glittering eyes, raised mast-head high, looks out, as it seems, for plunder or for victims."

Coming down to modern times, the sea serpent is still in evidence. In 1809 Dr. Neill, Secretary of the Wernerian Society, received a letter from the pastor of Eigg Island to the effect that he had seen a sea serpent. The animal followed the boat, and the clergyman had a narrow escape. He described it as a monster serpentine-shaped animal, seventy feet in length. Then came the sea serpent of 1833, seen by British officers at Halifax; and the one at Molde, observed by experienced fishermen. This serpent came within six feet of the boat, and was about thirty-six feet long. It is described as having a head like that of a man, and was seen by a surgeon, a rector, and a curate, all of whom were honest men. H.M.S. *Dædalus* reported a sea serpent in 1848, and very circumstantial letters were written by the officers, giving details of a remarkable sea serpent. In 1877 the officers of the Royal Yacht *Osborne* saw a sea-serpent-like animal off Cape Vito, Sicily. And so one might go on indefinitely, and make a book out of the sea serpents reported from the earliest time. Nearly all agree that the animal is over fifty feet in length; that it has the general shape of a serpent; many observers having seen a mane, and some have seen the head high out of water. All the sea

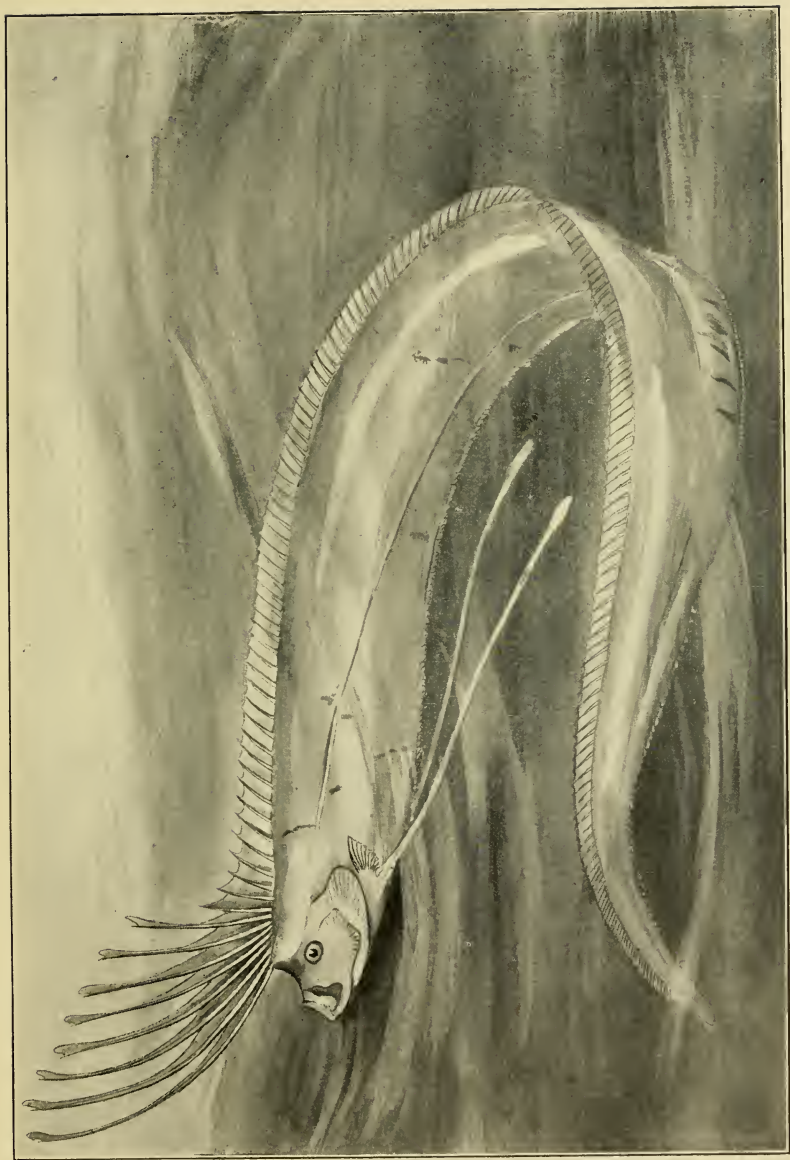
pent in Pyramid Lake in Nevada. A similar record exists of a sea serpent in Crater Lake, in Oregon. In similar cases, the apparent moving body is a line of water birds, and not a reptile; in others, doubtless floating logs, or other objects imperfectly seen, furnish the basis for the story. Men often see unusual or unexplained phenomena. In the average case not one in a hundred can report what he saw, or anything like it. The imagination does the rest, and the less a man knows, the more readily is he affected by suggestion. A horse sees nameless terrors in a flying newspaper, and a fool horse sees more than a wise one.

It is not fair, however, to let the sea serpent pass without a further reference to the animal which is the real basis of the only sea-serpent stories which are worthy of our notice.

The great oar-fish is a ribbon-shaped animal, about 22 feet long, and weighing 500 pounds. It is half transparent, like tough jelly in texture. Its color is light grass-blue, with darker cross bars, and it has a long jaw and a high forehead, suggesting the head of a horse. The dorsal spines in front are very long and stand apart from each other. Each one is scarlet in color, with a scarlet knob or tassel at the tip, and when the fish is alive, these stand up like the red mane of a horse.

The creature is harmless, weak in muscle, as well as feeble in mind. It lives in the deep seas, all over the world. After great storms it sometimes comes ashore. Perhaps this is because for some reason it has risen above its depth, and so lost control of itself. When a deep-water fish rises to the surface the change of pressure greatly affects it. Reduction of pressure bursts its blood-vessels, its swimming-bladder swells, if it has one, and turns its stomach inside out. If a deep-water fish gets above its depth it is lost, just as surely as a surface fish is gone when it gets sunk to the depth of half a mile.

Sometimes, again, these deep-sea fishes rush to the shore



OARFISH.
Newcastle, England.

to escape from parasites—crustaceans that torture their soft flesh, or sharks that would tear it.

Numerous specimens have been found in the Pacific, and to these several names have been given, but the species are not at all clearly made out. The oldest name is that of *Regalecus russelli*, for the naturalist, Patrick Russell, who took a specimen at Vizagapatam in 1788. We have seen two large examples of *Regalecus* in the museum at Tokio, and several young ones have recently been stranded on the Island of Santa Catalina in Southern California. A specimen twenty-two feet long lately came ashore at Newport in Orange County, California. The story of its capture is thus told by Mr. Horatio J. Forgey, of Santa Ana, California:

“On the 22nd of February, 1901, a Mexican Indian reported at Newport Beach that about one mile up the coast he had landed a sea serpent, and as proof showed four tentacles and a strip of flesh about six feet long. A crowd went up to see it, and they said it was about twenty feet long, and like a fish in some respects, and like a snake in others. Mr. Remsberg and I, on the following day, went up to see it, and in a short time we gathered a crowd, and with the assistance of Mr. Peabody prepared the fish and took the picture you have received.

“It measured twenty-one feet and some inches in length, and weighed about 500 or 600 pounds.

“The Indian, when he reported his discovery, said it was alive and in the shallow water, and that he had landed it himself.

“This I very much doubt, but when it was first landed it was in a fine state of preservation and could have easily been shipped to you, but he had cut it to such an extent that shipment or preservation seemed out of the question when we first saw it.

“At the time it came ashore, an unusual number of peculiar fishes and sharks were found. Among others, I found a small oar-fish about three feet long, in a bad state of pres-

ervation, in a piece of kelp. One side of it was nearly torn off, and the other side was decayed."

The present writer furnished this account of the capture of oar-fishes in Southern California to Dr. Jordan:

"From a zoölogical point of view, the island of Santa Catalina, which lies eighteen miles off the coast of Los Angeles County, Southern California, is very interesting, many rare animals being found there. Every winter the dwellers of the island find numbers of argonaut-shells, and several living specimens have been secured, one for a time living in the aquarium which is maintained here for the benefit of students and the entertainment of visitors. A number of rare and interesting fishes wander inshore from time to time. Several years ago I found various Scopeloid fishes, which, up to that time, had been considered rare; and during the past few years I have seen one oar-fish alive, while another was brought to me dead. From reports I judge that a number of these very rare fishes have been observed here. The first was of small size, not over two feet in length, and was discovered swimming in shallow water along the beach of Avalon Bay. I had an opportunity to observe the radiant creature before it died. Its 'topknot'—it can be compared to nothing else—was a vivid red or scarlet mass of seeming plumes, the dorsal fins, which merged into a long dorsal fin, extending to the tail. The color of the body was a brilliant silver sheen, splashed with equally vivid black zebra-like stripes, which gave the fish a most striking appearance.

"The fish was a fragile and delicate creature, a very ghost of a fish, which swam along, where the water gently laved the sands, with an undulatory motion, looking like one of its names—the ribbon-fish. The fortunate finder of this specimen could not be persuaded to give it up or sell it, and it was its fate to be pasted upon a piece of board, dried in the sun as a 'curio,' where, as if in retaliation at the desecration of so rare a specimen, it soon disappeared.

"This, apparently, was the first oar-fish ever seen in the

United States, so at least Dr. G. Brown Goode wrote me, at the time it was reported. In 1899 another oar-fish was brought to me, evidently having been washed in after a storm, and found within a few yards of the former at Avalon. The discoverer of this specimen also refused to allow it to be properly preserved, or to donate, or sell it to any one, who would have sent it to some museum, but believing it valuable as a 'curio,' also impaled it, the delicate creature evaporating under the strong heat of the semi-tropic sun."

Up to the present time about forty specimens of the Atlantic oar-fish have been taken: fourteen in Norway, nineteen in Great Britain, three in France, one in Bermuda, and three at the Cape of Good Hope. Of the Pacific form one was taken in India, five in New Zealand, two in Japan, one from Mito, and one from Aomori (both of the latter I have seen), and finally, five from Southern California.

Sea serpents there are, and of two general kinds, subjective and objective. The objective kinds are those of which you can get fragments to hold as specimens. The subjective kinds are more elusive, and can never be caught. They are exceedingly varied in form, size and color. Some have legs, and some flash forth fire from their eyes or breathe it from their nostrils. This is natural, for they are products of fire, that is, of fire water taken in connection with the salt water when men go down to the sea in ships, to spin yarns, or dally with the bottles that have large flat sides.

In simpler language, the subjective sea serpent is either a lie, pure and simple, or else a figment of alcoholic deception.

But there are sea serpents which are real, honestly seen by honest men, honestly caught by them and faithfully sent by them to the great museums.

And these, again, are of several kinds. Sometimes they are actually serpents, but when this is the case, they are small, and very snaky, and very venomous. The sea snakes of the tropical Pacific reach a length of two or three feet,

are yellow, with some brown blotches, rather stumpy in build, with the tail flattened like an oar. They have long fangs like rattlesnakes, and their bite is equally dangerous. These are found in the Indian Ocean, up through the Philippines to southern Japan, and I have two or three taken about Mazatlan in the Gulf of California. But the sea serpent of the honest mariner is not of this class. It is either a long black ribbon dripping back into the waves, on the surface of which it rides, or else it rears its blue head, surmounted by a long red mane, like an impossible horse. In the first case it is either a frill-shark or else some sort of eel, or may be a seaweed, and there are many sorts of eels and sharks and seaweeds fantastic enough to satisfy any imagination.

In the other case, it is the great oar-fish described, called King of the Herrings, because our Norwegian and Scotch ancestors once believed that it was the herring's real king, and that to harm it would be to drive the herring to some other coast. The name, "King of the Herrings," went into science as *Regalecus*, from *rex*, king, and *halec*, herring. The Japanese fancy, which runs in a different line, calls the creature "Dugunonuatatori," which means the "Cock of the palace under the sea." It is not a king, and not a cock, nor yet a serpent, and there is not in any sea this side of Mars any kind of serpent over four feet long.

Just as in Norway, the fantastic oar-fish was believed to be the king of the herrings and cherished as such, so among the Indians of Puget Sound, another freak fish is held sacred as the king of the salmon. The people about Cape Flattery believe, that if one does any harm to this fish, the salmon will at once leave the shores. This fable led the naturalists who first discovered this fish to give its name of *Rex-salmonorum*.

In Europe, a similar species has long been known by the name of deal-fish, or vogmar, neither of these names having any evident propriety.

The deal-fish is one of the most singular of all the strange creatures of the sea. It reaches a length of three or four feet. Its body is thin as a knife, and would be transparent, were it not covered over with a shining white pigment, which gives to the animal the lustre of burnished silver. On this white surface is a black blot, but no other colors. The head is something like that of the oar-fish, to which animal the deal-fish bears a close relationship. Both have small teeth and neither could bite if it would, and neither wants to, for they are creatures of the most inoffensive sort. On the head of the deal-fish, where the oar-fish has its mane, is a long, streamer-like fin. At the end of the tail, instead of the ordinary caudal fin, is a long, slim fin, which projects directly upwards at right angles to the direction of the backbone. No other fish shows this strange peculiarity.

The deal-fish swims in the open sea close to the surface of the water. It does not often come near shore, but it is occasionally blown on the beaches by storms. It has been recorded two or three times from Puget Sound, and twice from California. The finest specimen known, the type of the species, was secured off the Farallones in 1895 by a fisherman named W. C. Knox, and by him sent to the Stanford University. The specimen is perfect in all its parts—a condition rare with these fragile creatures—and its picture gives a good idea of the mysterious king of the salmon.

Two of these fishes have been obtained off the coast of Japan, and have been described and figured by the present writer in the annals of the Imperial University of Tokio. These are different from the California species, and they are probably different from each other, but they show the same bright silver color, and the same streamers on the head and tail. Probably they, too, in Japan, are kings of something or other, or perhaps silver swans from the submarine palace, for along such lines the Japanese fancy is more likely to run.

CHAPTER V

IZAAK WALTON



ND now we are moved to turn aside from the wild-eyed seers of sea serpents to a story of a very different sort.

Once there was a man, who turned from the rattle and the clatter and the quagmires of London town, not because he was sick of noise, or aweary of existence, but because he knew of something better. There was great strife in the little dingy old London of his day over politics and religion, and the Spanish alliance and proceedings at court, and a multitude of other things not refreshing to the soul. So he turned to the green lanes of Staffordshire, to the brooks that follow the winding lead of the Trent, as it drops down through the forests of Nottingham on its way to the North Sea. On the banks of its "silent silver streams," he could gather the richest of harvests, the "harvest of the quiet eye," as one of his disciples said in another green forest two centuries later.

There were no great rivers where Izaak Walton walked, and talked, and fished. The Dove is not so large as the Au Sable, not so clear, so swift, nor half so rich in fish. Nor can we compare the Dove with the Nepigon, Swaynham with the Gallatin, the Stour with the Stanislaus, nor the Trent to the Rangeley Lakes and the Saguenay. It is a quiet country, calm and green, that makes up Staffordshire. It stretches from Axe-edge to Weekin Hill, and back to Weaver Hill again, all forests and farms, with gentle springs under green trees, and scarce a mile over which the busiest brook would have to hurry. It is not the biggest river that gives

the most angling. Still less is it the one that has the most fish in it. Not even the biggest fish, nor the greatest number of kinds, nor the greatest number of each kind, determine the finest fishing. The spirit of the angler, like all other phases of the Kingdom of Heaven, is within us, depending little on outward conditions. But with all this, the Mecca of the Angler is in Staffordshire, and must remain there for all time, though the fish in the Stafford brooks be common, home-like creatures, in themselves scarcely worthy of a place on the boy's string as he comes home from the mill-pond. There are roaches and loaches in Staffordshire, and chubs that bite at dough, gudgeons and barbel that leap to the wriggling worm, with bleak and bream, and tench, and perch, and the rest, who are not to be forgotten in our literature, even should our hooks fail to search for them. But forever, so long as anglers read, and readers angle, there shall be a brook dropping down lazily toward the Trent.

It was not the beauty of the brooks alone which he disclosed on the banks of the Dove. There is "a bank whereon the wild thyme grows" and on this bank grow, too, cowslips and daisies and dandelions, and here for all time in memory, sits the genial Angler, and discourses as the birds sing, of divers fish and divers flies, the love of the ancients, the sweetness of humanity, and the way to dress fish—all that belongs to the divine art of angling, as distinguished from the vulgar trade of killing fish. It was here in Stafford that men first saw the beauty of "England now that April's there." Any other brooks, in any other shire, would have served just as well, save, that but one brook, at one time, could have its Izaak Walton.

But the beauty he disclosed was not that of brooks and woods. It was the delight of restfulness, the charm of the open mind, the mind of him who is not in a hurry, who envies not and hates not, who hath no fever in his blood, and asks for nothing which life and sunshine may not freely give.

With Walton, idle time is "not idly spent." Angling

means waiting by the brook, "a rest to the mind, a cheerer to the spirits, a diverter of sadness, a calmer of unquiet thoughts, a moderator of passions, a procurer of contentment." It begets "habits of peace and patience in those who prefer and practice it." It is like "the virtue of humility," which has calmness of spirit and a world of other blessings attending upon it.

Those who write men's lives tell us that Izaak Walton was born in Stafford on the 9th of August, 1593, and that on the 15th day of December, 1683, he passed away "in the ninetieth year of his innocency." It does not matter what his lineage was, for no one knows anything worth counting, nor do I know what pretended to be his education. There are marks in his spelling which show that it was not classical, nor need it be, to one who like him was "born beneath the Fishes' sign, of Constellations happiest." He went to London, this we know, and lived there many years, as a trader of some kind, selling something or other, wholesale or retail, but even here, this is a dispute among the makers of books.

Some argue that because his shop was small he must have been a wholesale dealer, and others take a reverse position. Clearly the greatness of his soul was not dependent on the bigness of his shop, and so, let us hope that he sold at a profit, especially when he sold his shop, and let it go at that. It is recorded that he held little parish offices, discharging their duties blamelessly, while in his leisure time he wrote love-verses graciously, and wrote, with noble sympathy, the lives of men whom he had loved, Donne and Wotton, among others, and Sanderson and Herbert.

It is related that in 1624 he married Rachel Floud, and lived with her in Fleet Street and in Chancery Lane. After her death, he went back in 1644 to Staffordshire, and here he wedded Anne Kerr. Of his ten children, two alone survived him, and these did naught which may concern us.

What touches us is his return "to linger long, long days

by Swaynham brook," catching "wafts of the singing in Heaven, when the wind is in the right quarter," and always in the right quarter was the wind with him.

After nine years in Staffordshire, appeared in 1653 the first edition of the "Compleat Angler." It is, as all book-lovers know, a book of dialogue, in which the angler teaches to the hunter and the falconer the charms and secrets of his craft. The running monologue of the wise man that knows fish is full of fair descriptions, quaint sayings, good humor and sweet patience, all thrown together with careless art, the work of the master-hand that shows no artifice, It teaches the philosophy of him who thirsts not, and hungers not unduly, and is, moreover, full of that choice learning which is not science because it is not truth, neither is it set in order. "No life," he says, "can be so happy, or so pleasant, as the life of a well-governed Angler, for when the lawyer is swallowed up with business, and the statesman is preventing or contriving plots, there we sit on cowslip banks, hear the birds sing, and possess ourselves in as much quietness as these silent silver streams, which we now see glide by us."

And the birds delight him as well as the streams and all their fishes. The lark rises from the grassy bank, and with him she never descends to the dull earth from mere necessity. The blackbird and the thrassell "bid welcome to the cheerful spring, and in their fixed mouths warble forth such ditties as no art nor instrument can reach to." "The honest robin that loves mankind both alive and dead, displays her virtues to him. But most of all, the nightingale delights his heart, and leads him to say, 'Lord, what music hast Thou provided for the saints in heaven, when Thou afforded bad men such music on earth!'" "I'll tell you, scholar," he says, "that when I sat last on this primrose bank and looked down upon these meadows, I thought of them as Charles the Emperor of the City of Florence, that they were too pleasant to be looked upon, but only on holy-days."

We must confess right here, that Izaak Walton was no naturalist. He was just what his book asserts, a "Compleat Angler." He was an angler who could be tempted by no competition, and no boastfulness, into wanton taking of life. One fish for one's supper, and one for a friend, or for the poor widow in the thatched hut, and his string is long enough. The "trout-hog" and the "fish-braggart" find no encouragement from Izaak Walton. The bigness of one's basket bears no relation to the success of one's angling. For angling is a subjective process, not a swelling of the store of meat.

None of the naturalist's divine curiosity spurred Walton on. He cared nothing for the difference among fish, and never gave them an analysis. He did not know the charr, which he calls the umber, from the grayling, and because the grayling is scarce in "Swaynham brook," if indeed it lives in any brook from Axe-edge to Dudley Green, he does the "flower of fishes" scant justice. The leather lips and the throat jaws of the tench and bream are simply facts of the hook, to him, and give him no suggestion of their common origin, or of the steps by which they have become different species of fish. He is interested in making better fishes out of his despised dace, rather than in finding out the secrets of their fishy lives.

The chub, he tells us, is "much objected against, not only for being full of small forked bones, dispersed all through the body, but worse than that, because he is waterish, and the flesh of him is not firm, but short and tasteless." It is his pride that he can take this "villain chub," and make him a good fish by his dressing of him. Even of the brooks he loves, he tells us nothing distinctive. There is no pride in their names, nor joy in their geography. For aught he says, they may as well be in Arcadia or Arden as in Staffordshire; we only know which they are by poring over a Stafford map, not from any details given us by him who has made them famous. This again, is not the method of the natur-

alist, who would have us see the things just as they really are. What concerns Walton is their effect on him.

Again, a naturalist would have left the "front and back door" of his mind "less invitingly open" to the quaint sciences of his credulous age. He jots down in all seriousness the intricate theories of learned men who believed most freely that which never was and never could be. Yet he touches these pundits with a hand so deft, that no one can tell whether he believes their words or, with the next century, laughs at their pretentious nonsense. "Some affirm," he says, "that any bait anointed with the thigh-bone of a horse is a great temptation to any fish. This has not been tried by me, but told me by a friend of note, that *pretended to do me a courtesy*." "I have been told," he says gravely, "that one hundred and sixty minnows have been found in a trout's belly. Either the trout had devoured so many, or the miller that gave it to a friend of mine, had forced them down his throat after he had taken him." In like vein he tells of the luce or the pike, the tyrant of the waters even as the salmon is king. "'Tis not to be doubted that they are bred, some by generation and some not, as namely of a weed called pickerel weed, unless the learned Gesner be much mistaken, for, he says of the weed and other glutinous matter, with the help of the sun's heat in some particular months, and some ponds adapted for it by nature, do become pikes. But doubtless divers pikes are bred after this manner, or are brought into some ponds, some other such ways as are past man's finding out, of which we have daily testimonies."

Here, not a flicker of an eyelid betrays his quiet chuckle at the angling lore of the musty schoolman, and yet he was ready to laugh aloud, though in the most good-natured way, for it is recorded that he was, like his friend Wotton, of a most persuasive behavior.

And for the rest we may borrow the words of Lowell:

"Izaak Walton was a staunch royalist and churchman,

loved music, painting, good ale and a pipe, and takes care to tell us that a certain artificial minnow was made by a 'handsome woman that had fine hands.' But what ennobles and justifies these lower loves, what gives him a special and native aroma, is that above all, he loved the beauty and holiness and the ways of taking and spending life, that make it wholesome for ourselves and our fellows. His view of the world is not of the wildest, but it is the Delectable Mountains that bound the prospect. Never surely was there a more lovable man, nor to whom love found access by more avenues of sympathy."

If such be the "Compleat Angler," then, as Walton himself once observed, it is indeed "good luck to any man to be on the good side of the man that knows fish!"

CHAPTER VI

THE GRAYLING AT CARIBOU CROSSING



SAINT AMBROSE of fragrant memory, fisherman of old, and likewise a fisherman of men, "magnanimous, plaintive, and intense," once declared in his town of Treves in Gaul (Augusta trevirorum), by the Black Gate, fifteen hundred years ago, that the grayling was the "flower of fishes." And with this gracious word, being called to be Bishop of Milan, the blessed saint drops to the southward and out of our history, which must wander far away in wilder scenes 'mid rougher company. In any event, the grayling is certainly the most choice, the most unhackneyed, of all the prizes of the angler, and wherever it is found, it finds its group of appreciative admirers.

The Latin name of the grayling, *Thymallus*, comes from the fact that when fresh it has the odor of wild thyme, a fragrant mint common on the brooksides of northern England. Shakespeare knew on the Avon in Stratford, a "bank on which the wild thyme grows," and I, too, have found in fragrant Warwickshire many a slope which well answers to Shakespeare's description.

But though the grayling is a sweet fish, pleasant to smell as to look upon when it comes fresh from the ripple, only those who know and love it are able to detect the fragrant odor which the ancients knew so well.

The grayling is a cousin to the trout. Its mouth is smaller, its teeth are not so many, or so sharp, and it has neither the strength, nor the speed, nor the voracity of the least of the

trout. The scales are larger than on any trout, and there are black spots, and blue spots on them, on a gray background. From the gray color came the fine old English name of Grayling, as well as the German name of Aesch.

The shape of the body and fin is like the trout, the little adipose fin is there, just the same as in the trout. The dorsal fin is, however, different. It is much higher than in any trout, and with more rays. It rises up like a sail, and it is marked with sky-blue spots, which give the fish a distinguished appearance when he is at home in his own waters.

The grayling lives in swift, clear streams, not often in lakes. It calls for colder water than the trout, and so its range is farther to the north. Indeed, it is a rare fish outside the Arctic Circle.

The different species of grayling are all very much alike, in looks as well as in habits. The common grayling of Europe ranges through northern England, Scotland, Scandinavia and Russia. There is a species of grayling spread all over Siberia, but we know very little about this fish except that it is very much like the European species and midway between that and the grayling of Alaska.

Through the Yukon region of the great Northwest there is a grayling very abundant in the right waters, and bearing the name of "the standard-bearer." In the old days after the great glacial ice, this fish extended to the eastward over a much larger area, but the ice has melted away and there are left three isolated colonies to the southeast of the main band. One of these colonies lives in certain streams, notably the Jordan and the Au Sable, in the sandy woods of the southern peninsula of Lake Michigan. In both these streams the grayling is growing scarce through the combined evil influences of the lumberman and the trout-hog. In the northern peninsula there is another isolated little colony. Let us call its stream the "Nameless River," and if we leave it so, the thyme-scented fish may increase to fill other rivers which are not nameless.

The remaining colony—a little changed from the other two through long isolation—is in Montana, at the head of the Missouri River. The Montana grayling is most plentiful in the Gallatin River, and if you look through the mountains till you find Horsethief Creek you will be sure of at least one day's good sport. It will take all day to find the creek, no matter from where you start.

And this brings me to describe my best day's sport with the grayling. It so happened that in June, 1897, the present writer was in the city of Juneau, the metropolis of Alaska. That day the Canadian surveyor, Ogilvie, since noted in history, had reached Juneau from up the coast, and across the mountains, with a wonderful story of the happenings in the Northwest Territory of Canada on the banks of the middle Yukon. It seems that the Indian, Skookum Jim, of Caribou Crossing, with his friend Tagish Charley, a "squaw-man" named Siwash George, and his wife, who was Skookum Jim's sister, were wandering across the country, supposed vaguely to be in the interest of one Anderson, looking for gold.

Away down the river beyond Lake Labarge, one of the men took sick. He had eaten too much blubber of some sort, and the wife of Siwash George went down to a brook to get him a basin of water. In the bottom of the basin was a streak of fine gold. They went down to the stream and bailed out more. Then Skookum Jim, as his name would indicate, started out swiftly at the top of his speed, "touching only the high places," to record with the Dominion officials the claim of himself and his associates. Skookum in Chinook means swift; hence Skookum Chuck—a waterfall. Bonanza Creek, Klondike, Dawson at once became names, and then realities, and all the world knows their story. Skookum Jim, a millionaire, built himself a large house of pine lumber at Caribou Crossing. He went to Seattle to buy a Brussels carpet for its floor. When the carpet came it was too broad by nearly a yard for Skookum Jim's best

room, so he had the house cut apart, and spread, until the house was large enough for the carpet. How Tagish Charley became one of the generous rich, beloved of all men, and how Siwash George deserted the woman who made his fortune for a San Francisco actress—all these with the spectacular career of Swiftwater Bill are known to every one alive—to the gossip of the Smart Set of Caribou Crossing, Seattle, and San Francisco.

When Ogilvie told all this in Juneau the whole town responded. Juneau itself lies on the very frontier of adventure, and here was something newer and greater, and only two thousand miles or so futher up the gulch.

So the gamblers and gold-seekers, the clerks and lawyers, resigned their positions, threw up their jobs, in some way or another made their way to the head of navigation, Dyea or Skagway, and there struck the White Pass Trail. The Bright Eyes Opera Company broke its engagement at Juneau, and men and women started over the mountains to Bonanza Creek. And after them came a most wonderful migration, one of those movements which, if anything could, lent "to the sober twilight of the present the color of romance."

All the way southward the word went from Juneau. Cigarette young men, "dissolute, damned and despairful," who had never done a man's day's work in their lives, crowded the smoking-rooms in the Pullman cars, and pampered dogs—St. Bernard, great Dane, mastiff—brought up in luxury, and bought or stolen to do the work of a husky or Siberian wolfdog, rode in the baggage cars. Along with the rest came young women and old women, dainty Mercedes, silly, pretty and whimsical, demanding the impossible; elderly graduates of the cheap boarding-houses, with iron hand and iron jaw, capable of making some sort of a way anywhere. All were loaded down with all clothing and provision needed for an Arctic winter. Most knew nothing of hardship, nothing of dogs, nothing of trails over glacial mountains and

through endless chains of rock-bound lakes, each hidden in its cleft of rocks. They knew nothing of boats, or rafts, or the breaking up of the ice, nothing of gold, or men, or Alaska. And the dogs were just as ignorant and had not even seen a map of Alaska, and did not know beforehand that they were going there.

From Skagway, a wild Bedlam of incongruous elements, with its hero mayor, chief of the Vigilantes—"men with the hearts of Vikings and the simple faith of a child"—the trail goes up the boisterous river. Through the fir woods, past the mouths of glaciers, into a great amphitheater like that at the foot of the Splügen Pass, then in long zigzags and windings, past reckless, splashing waterfalls and unbridged chasms to the foot of the moss-covered White Pass. Then up the Pass to its gusty Summit Lake and the long ravine-like chain of lakes at the head of the Yukon, which may keep one guessing for miles as to the way past or around them.

In a sheltered depression on the summit is a place which should be historic. Here every band of pilgrims has camped for the night. Here it has cast away its luggage, discarded its horses, abandoned its dogs. Into the springy heather-grown basin, sheltered from the wind, we may find, trodden into the mud, harnesses, sleds, bottles, cups, plates, hats, trousers, neckties, bones of dogs, bones of horses, ravens, newspapers, playing-cards, cigarette papers, shirts, collars, every evidence of a failing civilization. The dead ravens tell the tale of their premature attacks on dogs and horses, for the men have pistols, and they are the last to go. Near this place, some later humorist has built a house of empty beer bottles, set together with mortar—a house big enough to shelter you and me from the storm. Bones of men are strewn along the way—you can trace the trail by the soiled and dislocated heather—but all the bones, so far as I know, have had a decent burial. Some of them, to be sure, were buried under avalanches, but that

was on the south side of the pass, near the foot of the great unnamed waterfall over which unheeded flows another and a greater Nameless River.

We have passed the waterfall and the river and are now well down on the Yukon side. The little ice-cold Summit Lake, where more than one loaded team and its teamsters went through the breaking ice, is said to be well stocked with trout. Men described them to us as Dolly Varden trout. As the lake flows into the Yukon, and as the Dolly Varden is not found in the Yukon, which has only the Great Lake trout, or Mackinaw trout, we developed a geological theory that the Yukon had stolen this lake from the Skagway. The theory looked not unreasonable. Rivers do such things. At the head of the lake was a little dam of glacial drift. Cut through this dam, and the head of the Yukon would flow down into the Skagway. Perhaps it did so in the days before this dam was made. But facts are facts. Let us see what kind of trout lives in the lake, and we will tell you its glacial history. My companion, Professor Harold Heath, borrowed a fly, and cast into the lake. We had one rise and landed the fish. It was the Great Lake trout, and not the Dolly Varden; so we laid our theory on the shelf, and allowed the Summit Lake to remain in the past, as it is in the present, a head spring of the Yukon.

I said that rivers do such things. At the head of Roanoke River, near Allegheny Springs in Virginia, is a valley which the Roanoke has stolen—fishes and all—from the Holston River, on the other side of the ridge. To steal a valley is to undermine it gradually from the other side, until the water in the first valley turns and flows the other way. But the Yukon has stolen nothing from the Skagway, and on second thought, it deserves no credit for its reticence.

It looks cold to the north of the White Pass, even in midsummer.

There "lonely sunsets flare forlorn
Down valleys dreadly desolate";
There "lordly mountains soar in scorn
As still as death, as stern as fate."

Robert W. Service.

Down the long rock-ridges between the lakes goes the trail, on and on through reindeer moss and heather, all the way above timber line, down to Lake Linderman—long and narrow, like a rock-bound ditch of the giants—down the long shore of gusty Lake Bennett, through scrub and swamp, birch and bramble. No wonder so many took to the ice, rotten though it be in the early summer. No wonder so many tried to make rafts of logs, when the wind blew in the right direction. On and on down the straight shore of Lake Bennett, two days' march it may be, then you come to Caribou Crossing. The Caribou is the native reindeer, and here in the interval between Lake Bennett and Lake Tagish, with Lake Marsh beyond, is the only place for five hundred miles where a herd of caribou can cross the Yukon River. Let us cross it quickly, too, for the water is very cold and deeper than a man or caribou likes to wade. Here at Caribou Crossing lived and worked for a generation Father Bompas of blessed memory, Bishop of the Yukon. And here still lives his charming wife, born to the soft skies of England and the gentle ways of English society, but a power for good in the wilderness to which she has given her life. It seems to me that if the Church of England were all wise, it would some time send His Grace the Archbishop of Canterbury to exchange places with the Bishop of Yukon for a year. The bishop of the boundless hills would learn something no doubt in fair hand-painted Kent, but think what the Archbishop of Canterbury would learn were the seat of his diocese for a year at Caribou Crossing!

From Caribou Crossing the river curves through the fir woods to the right, for we are below timber-line again. Then it swerves forward through a couple of lakes into a

swift gorge—the famed and fated White Horse Rapids—below which it widens out into the immense Lake Labarge, which runs to the northward as far as the eye can see, and a good deal further. Some men, about one in ten, perhaps, preferred to take their chances in running the White Horse Rapids, rather than to carry their belongings over the Caribou Hills. Some of them, one in two, perhaps, got through safely. The rest went to swell the romance, the terror, the tragedy of the gold of the Klondyke and the White Pass of the Yukon.

But Caribou Crossing is full of fish and some of these, lake trout, cisco, pike, ling, sculpin, take the hook when it is properly baited. You can stand on the little wharf in front of the bishop's house, or on the bank in Skookum Jim's dooryard, and cast for grayling, and the grayling will respond. Better than this, you can cross the river and go a couple of miles through the fields and woods, and around a bayou when the thicker forest begins. In a little glade of the woods you will find a roaring brook (Kilbourn I think its name is), and at the foot of a cascade you will find the grayling as eager as you are, and if you are contented with a reasonable basket, you will fish awhile, then lie down on the heather and take for yourself, something better than many fishes—that which Wordsworth called "the Harvest of the Quiet Eye."

CHAPTER VII

FISHES ON THE MOUNTAINS OF THE SEA



IN strolling along the Sierra Nevada, one does not realize that the islands rising from the turquoise Kuro Shiwo offshore, the Black Current of Japan, are the summits of oceanic Sierras which have pseudo forests and inhabitants very much after the mountains of the land; indeed, nearly all the shore-loving marine animals are mountaineers, living on the slopes of huge mountains, represented by the islands and continents which rise ten or more miles from the greatest depths, to their loftiest altitudes into the rare airs of the upper atmosphere.

Some forms live at the base of these mountains in regions of winter, where the temperature is just above freezing; others have climbed up the slopes, and live in moderate climes; but by far the greater number live at the summit, at the water's edge, or not far from where the great ocean forests have formed a wealth of submarine verdure.

“Far—to where the haughty North
Sends his eager minions forth
Tugging at the tawny manes
Of deep sunken mountain chains;
Great ships greeting with a laugh,
Tossing them about like chaff.
Never they, since tides began,
Tamed to let or call of man!”

Nearly the entire Pacific coast of America is fringed by a beard of kelp, rich green or olive in tint and hue, that rises from fairly deep water, and sends out its enormous

leaves in every direction, the tidal currents may indicate. At very low tide, their splendid fronds lie on the surface, and are often caught by the wind and lifted above it, flashing brilliant tints of amber and old gold, against the blue of the ocean, that appears here and there like some splendid mosaic pavement.

“’Twas where o’er the sea
Delicious gardens hung, green galleries,
And marble terraces in many a flight,
And fairy arches flung from cliff to cliff,
Bewildering, enchanting. . . .”

Drifting over this forest of the ocean at midday when the sun is overhead and all its beauties are intensified, on the coast of Southern California, the offshore islands rise, as in the case of Santa Catalina, a literal mountain, from a base not far away, a mile deep, to half a mile above it. Indeed, the average depth of the Pacific is three miles, so the islands are finger-like pinnacles, mountains of extraordinary tenuity rising from the sea. At Santa Catalina, San Clemente and the Coronado Rocks, they are so precipitous where the deep blue waters of the Kuro Shiwo lave the shores, that a ship would in places strike her bowsprit on the rocks before her keel struck.

The ocean forest, the green and amber weed, the long crimped, resilient, fluted leaves, float over this blue current, standing out in contrast to it, blending with it, and taking on a thousand charms from the association; and, in looking down into the galleries and loops, one sees the gleam of turquoise, the fire of the opal and countless tints, radiant and beautiful.

The islands are surrounded by this forest—a literal floating garden of the sea, and there is often still another forest several hundred feet farther out, where the great Nereocystean leaves rise and swing in the tidal currents. This forest is as truly inhabited as are the glades of the land. It

is the highway of countless fishes—vast schools of barracuda, yellowtail, smelt, and sardines skirt its borders; the giant black sea bass makes its home here, and so clear are the waters that you may look down into them, and fifty feet below see the big bass floating in the nooks and corners of its choice—a veritable colossus of the fishes.

The beauties of this region, on the slope of the precipitous mountain of San Clemente or Santa Catalina, or the rocky mountain of Santa Barbara Rock, twenty-five miles to the north, can hardly be described.

The latter is a small rock, several acres in extent, which, if not surrounded by water, would appear an extraordinary pinnacle rising from the abysmal regions of the sea, as not very far away the "Albatross" found bottom almost a mile below the surface. The slopes of this needle of the sea are invested with graceful forests of nereocystis. The long olive-hued leaves rise upward in water as blue as sapphire, so that the graceful outline of the leaf stands out in sharp relief, and here, and along all the adjacent shores, one finds opportunity to form acquaintance with the dwellers on the slopes of the mountains of the sea.

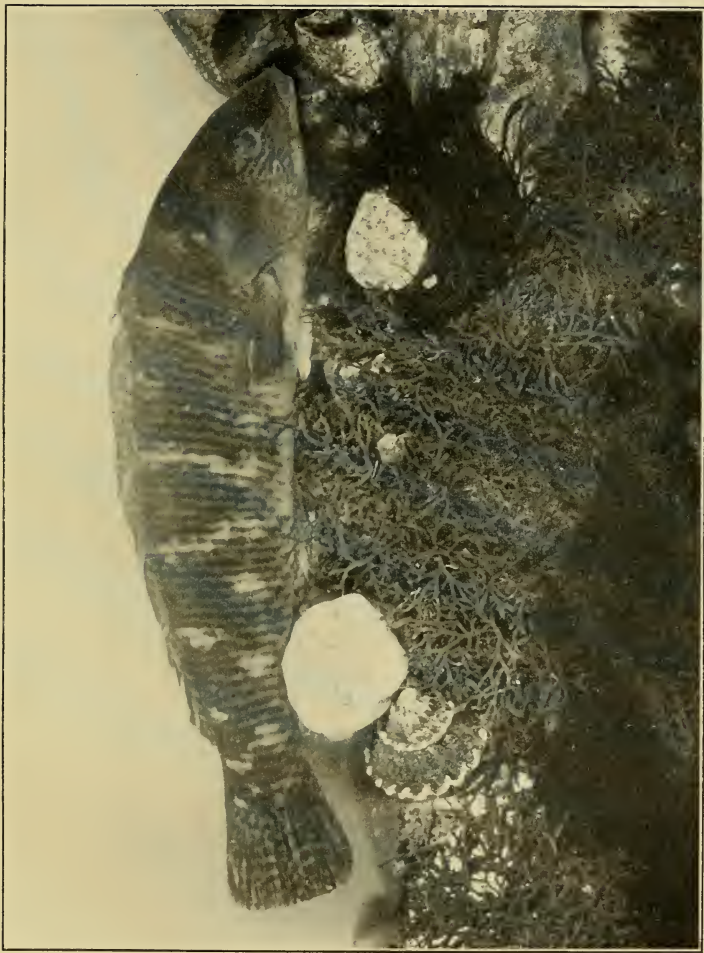
With the big sea-bass are flashes of deep yellow, telling of the Garibaldi, calling to mind the angel fish of the tropics, of other kinship. Graceful of shape, debonair, a "sea orange," poising among the leaves, now in sharp relief against the turquoise depths of the sea the Garibaldi is to the manner born, and even in its growth and development is a living color scheme, as the very young are living sapphires, gleaming with seeming iridescent tints of turquoise and sapphire.

As they grow, they take on yellow tints, which gradually spread and envelop the fish, until in adult life the Garibaldi is a reddish yellow, a blaze of red gold against the sea. One never tires of gazing down into the Kuro Shiwo, as it flows on and on, as it presents a marvelous and varied field of life. Here is the harlequin-like fat-head, black and red

banded, white chinned, rolling its azure eyes upward, while its demure mate, garbed in the modest hues of a dove, loiters in an arch of kelp. In the watery air float radiant shapes, crystals of the sea in form, "shaped as a bard's fancy," the very ghosts of animal life, the merest tracery against the blue, yet clothed in splendid vestments, glowing colors, which at night encompass them in lines of flame. The most remarkable of these fairy-like shapes have been named sea-sapphires.

They are almost invisible, are in reality kinsmen of the crabs, floating in the current, free swimmers, yet among the greatest glories of the sea. Opposite Avalon the water takes on a splendid blue; all the shades of turquoise and sapphire are seen, and when at night or early morning the sun is low, over the sea is drawn a veil of vermilion, or old rose, so that each wave is a blaze of color—green, red, yellow, scarlet, purple, amber.

If into this one should drop or scatter ten thousand gems—diamonds, yellow, pink, and white; rubies, of old mines and new; sapphires, from the faintest azure to the deep splendid blue of the opal, tourmaline, or turquoise, he would have a faint conception of the effect produced by a swarm of these gems, or living sapphires, which drift along in this deep-toned Black Current of Japan, where it sweeps the shores of the Southern California islands. Each one has a different color, and gleams and flashes like a gem of the purest water; not in phosphorescent light, but iridescent, visible at their best when the sun is overhead, and sends down shafts of light that illumine the nooks and corners of the mountains of the sea. Here, then, is the rialto of the fishes; a highway along which splendid white sea bass and others float. A few hours before this was written, the authors, looking down through the window of a glass-bottom boat into the kelp beds, saw scores of these mighty game fishes, all over three feet long, and weighing at least fifty pounds. Their backs were blue, and as they



THE KELP-FISH.

Photo. from life. Santa Catalina Zoological Station.

moved slowly among the long fluted leaves, the sight was one long to be remembered.

Near by, entering the forest, is the yellowtail or amber fish, robed in silver, its back green, its fins yellow and a streak of yellow running down its sides from head to tail. This is the game fish of the people; sometimes running in schools, and always to be found along the kelp beds with the barracuda, kelp and black sea-bass.

If the surface regions, the slopes of the mountains, are interesting, what shall we say to the horde of bottom fishes, which creep in from the deep sea, and live and hide at various altitudes? The bottom is often a mass of kelp, covered inshore with a countless variety of weeds; and in drifting along one is constantly regaled with new forms, startling colors, varying from the vivid translucent greens to the iridescent gleams of some bush-like form. Part of this inshore forest is over two feet in height, and forms a mosaic of brilliant color along shore, moving to and fro in the waves, thus opening up other attractions in greater depths. Many of the weeds are incrustated with lime-secreting forms, and when closely examined reveal new and greater beauties.

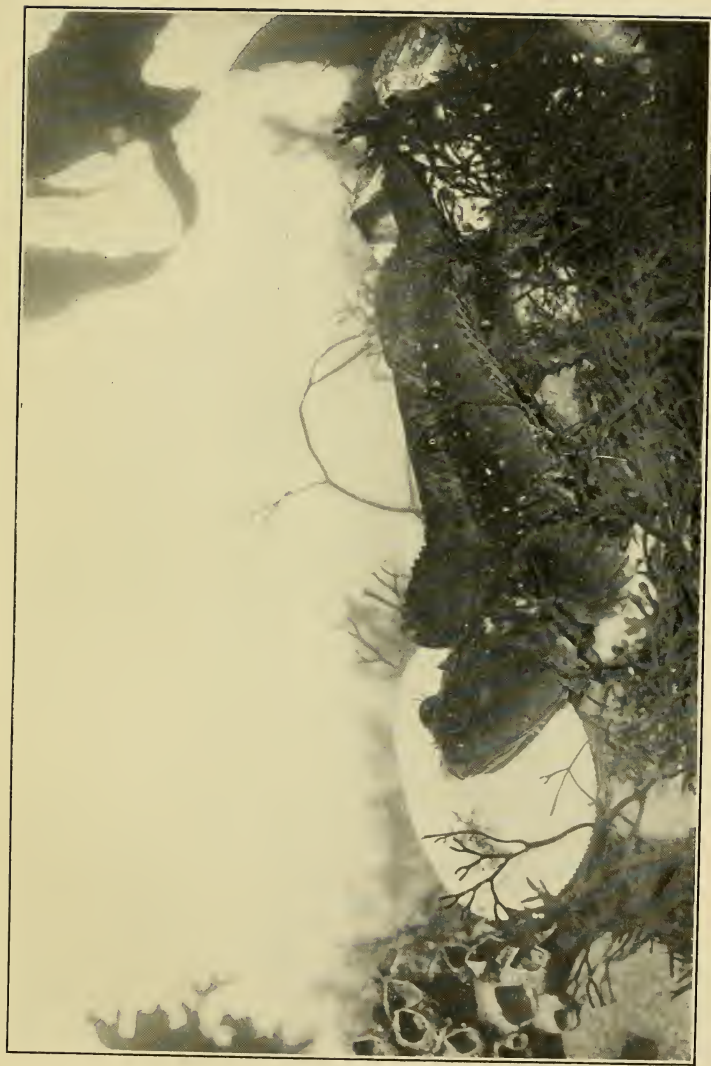
Some rocks are covered with the flower-like *Serpulæ* that blossom and disappear, their cups vying with the real flowers of the land in color, tint, harmony and shade. At the slightest shock they disappear, then slowly bloom again. Here are the anemones—giants of the coral tribe, six or eight inches across, in all shades from mauve to white and purple and its variants. The sea-cucumber lies like a slug across some azure-hued rock, and in every crevice are seen the black waving spines of the echinus. In the lesser weed that waves forward and back with the restless sea, is the kelp-fish, long, slender, its fins and tints a strange mimicry of the kelp. Instead of swimming about like the rest of the fishes, it poises among the weed, literally standing on its head, waving with the resilient forest in which it lives, and

so resembling the plants that the fish can hardly be distinguished.

Lying on the bottom is the dark blue "midshipman" with its rows of silvery spots along its abdomen, that shine like buttons and may gleam at night, and the walking fish. A few feet away from it, we may see the *Antennarius*, with bulging eyes, tall richly colored fins, the side fins appearing to act as arms by which it pulls itself along, its big eyes peering about, the very spirit of aggressiveness. In the crevices are star fishes of all shapes and tints, splashed and dotted with big tubercles—dazzling and conspicuous objects. Here the octopus pulls its ungainly shape in and out, emitting black clouds of ink when startled, or suddenly disappearing before your eyes, by its marvelous, indeed uncanny method of changing color, or adapting its tint to that of its immediate surroundings.

Here one is seen sitting partly upon its eggs, which hang from the side of a moss-covered rock, objects of the greatest solicitude. If we are very fortunate, in this little bay we may see its cousin, the paper nautilus, crawling along, its delicate shell or egg capsule over it. Now it will leave it for a moment, and dart away into some crevice, returning with a rush, to swim away by the forceful current of water from its siphon. On the sides of the rock is the great key-hole limpet, four inches long, a mound of velvet-like black, with tints of vivid yellow, a blaze of color; and near by the splendid *haliotis*, the ear shell, or abalone, whose rich iridescent shells flicker and gleam among the weed. Every nook and corner of this mountain slope is taken up by fishes, shells, or animals of some kind; some at the roots of the forest trees, some in the branches; others, as the blue-eyed perch, swimming above them, poising in the leafy halls and coverts; others again in the open, swimming fearlessly along the highway of the fishes.

Here the sea lions bask, roll and chase the radiant rock bass into the kelp, or lie on the surface, passing the time in



THE WALKING FISH.
Santa Catalina Zoological Station.

games; and here, though rarely, may be seen the sea otter riding the great swells as they come seething in on the windward shores, lifting the masses of weed and tossing them thither and yon.

During great storms in winter these forests of the sea are often wrenched and torn from place, and tossed upon the beach in great masses; from deep water massive club-like floats rise, with slender vines many feet long, coiled and entangled in the sea-wrack, telling the story of the strange and beautiful vegetation of the mountains of the sea.

CHAPTER VIII

THE FISHES OF THE DEEP SEA



THE study of the animal life of the deep sea is mainly concerned with three categories of creatures. The first of these, is that named by Haeckel, *Plankton*, the organisms, mostly minute, which float on the surface of the open ocean. Among the Plankton, young fishes may sometimes be found, occasionally the young of shore fishes, carried from their natural habitat by oceanic currents. Next come the Pelagic forms, those moving freely in the water near the surface, and choosing the open sea by preference. Besides whales and dolphins, many fishes are pelagic. Among these are various large forms, as sharks and numerous members of the mackerel family, as the tunny, the albacore, the bonito and their relatives. The smaller pelagic fishes usually go in schools, the larger ones swim about singly. Among those in schools are certain species of mackerel, and most of the flying fishes. All these pelagic forms resort to certain regions, chosen bays and straits usually within the tropics, for purposes of spawning. From these regions they sally forth on more or less definite predatory expeditions. Many pelagic fishes breed in the Mediterranean and in the West Indies. Others find their homes about the islands of Southern California, and in Hawaii and Southern Japan.

The third category of deep sea life, is that constituting the bassalian fauna, or life of the depths. This includes forms living below a depth of five hundred feet; some of them swimming freely, others lying close to the bottom, or, in the



BLUE-EYED PERCH.

In the Floating Gardens of Santa Catalina, California.

case of invertebrates, often attached to the ground. The bassalian fauna grades perfectly into the ordinary shore fauna, yet it has many characteristics of its own. It is largely composed of fishes, yet sea urchins, shrimps, crabs, crinoids and a great number of microscopic forms extend into its region and form part of it.

In general, the bassalian area lies below the region penetrated by sunlight. The differences of temperature of day and night, of summer and winter, do not extend to it. It is therefore an area of cold and darkness, or uniformity of conditions, and the tremendous pressure of the water keeps the creatures developed in it from extending their range upward or downward. A deep-sea fish rising above its depth is crushed by the reduction of the outside pressure. As the pressure within exceeds that on the outside, its tissues swell, its blood vessels burst, its eyes are forced out, its stomach turned wrong side out. Conversely, a fish sinking below the pressure to which it is accustomed is soon crushed or suffocated. Sometimes a deep-sea fish, in a struggle with its prey, is carried above or below its depth, in which case both are destroyed. It will be understood that the tissues of a fish developed below a mile of water are permeated with water of the same degree of pressure as that outside. The deep-sea fish in his normal position no more feels the two thousand three hundred and twelve pounds pressure per square inch of a mile depth of water than we feel the fifteen pounds per square inch of forty miles' depth of atmosphere.

The greatest depth of the sea yet recorded is approximately six miles. This is found to the eastward of Guam in the mid-Pacific. Being in the mid-Pacific myself, at the time of writing these words, I cannot give the exact figures. At this depth life was found, but no fishes were obtained. The greatest depth at which fishes have been taken is under the Gulf Stream off the Carolina coast, the depth approaching five miles, as I remember.

The study of the life of the deep sea has been mainly the result of vessels especially fitted for the work of dredging and trawling. First in importance in this regard stands the "Albatross," a vessel of the United States Navy, controlled by the United States Bureau of Fisheries. Next comes the British ship "Challenger," which made a notable cruise around the world for the purpose of deep-sea investigations. This trip has yielded larger results than any other single cruise, so far as the deep seas are concerned, but the "Albatross" has made a far greater number of expeditions. Other notable dredging vessels are the "Investigator," in the Indian Ocean, the "Travailleur" and the "Talisman" about the coast of France, the "Vigilante" in the Mediterranean, the "Knight Errant" about Great Britain, the "Blake" and the "Fish Hawk" in the United States and the "Thetis" in Australia.

The writer's experiences on the deep seas have been mainly on the "Albatross." The principal piece of apparatus used in this work is the beam trawl. This is a long net, resting at its mouth on two curved iron bars like sled runners.

The method of fishing is to drop this net, properly weighted and adjusted, to the bottom of the sea, holding it by a wire cable. When it has reached the bottom, whatever the depth, the vessel steams slowly forward, dragging it for a distance, it may be for a few rods, it may be half a mile. Then, by means of a steam windlass, the net is drawn to the surface. Those fishes which lie near the bottom are sure to be taken, and others may be caught as the net rises. As nets are unknown to these creatures, they make no effort to escape, and even the most active are readily caught, if near enough to the bottom.

Sometimes the trawl is caught on a rock, and is lost altogether. Sometimes the net is torn on a coral mass or other jagged obstruction. Sometimes it is filled with soft mud, or with loose stones; sometimes again with seaweeds, or

occasionally, when the depth is not great, with sea urchins, or sponges, or scallops, or other shell-fish. Sometimes it contains nothing at all, even after a laborious half day has been given to a single operation. More often the naturalist is rewarded by a few fishes, with crabs, sponges, sea urchins, and sometimes in a single haul he captures very many.

At the depth of a few hundred feet the fishes are usually red in color, with very large eyes. At greater depths, they are all of a uniform violet or inky black, and the eyes are either excessively large or excessively small. The very large eyes seem to represent an effort to make the most of what little light there is. The very small ones are simply vestiges, and mean that Nature has given up the idea of letting her creatures see. A certain number of these deep-sea fishes are provided with lanterns or luminous spots by which they find their way in the great depths. All the species thus provided have well-developed eyes. The luminous spots usually lie in rows along the side of the body. In some forms the whole snout is luminous, like the headlight of an engine. In the case of a Japanese deep-sea sharklet, about a foot in length, the whole belly is luminous. Of this species, *Etmopterus lucifer*, Dr. Peter Schmidt of St. Petersburg, once made a sketch in the night by the light given out of the animal itself.

The deep-sea fishes are all descended by degeneration and specialization from various tribes of shore fishes. The degeneration involves loss of organs, the softening of the tissues, both bones and muscles, and often the loss of fins or scales. By the stretching of the tissues, a deep-sea fish may often swallow another of considerably larger size. The specialization consists in the great development of luminous spots in many cases, the development of very long teeth in most cases, and in occasional modification of fins as organs of touch.

Most of the luminous forms are of the group called lantern-fishes, degenerated from allies of the smelt and trout.

Many deep-sea forms are modified eels. Still others are derived from the anglers or fishing frogs. Some are degenerate herrings, some degraded mackerels, and the large group called grenadiers are modifications of codfish. A few sharks and chimæras enter the depths, as also occasional members of several others of the various orders and families of fishes.

As the conditions of life in the depths are very uniform, there is practically no difference between the deep-sea fishes of the tropics and those of the north. Many species extend their range unchanged over a very wide area, and yet species are separated from their allies by isolation in the deep seas, as elsewhere. Most of the species of the Atlantic are different from those of the Pacific. Those about Hawaii are different from those of Japan for the most part, and those of California and Alaska are still more different.

Among the deep-sea fishes are many most astonishing forms. Perhaps as striking as any is the great oar-fish, referred to in a previous chapter.

To the practical question as to the value of these fishes, we may say: Most of them are good to eat, but their flesh is watery, and without flavor. Their value to museums far exceeds their value for the table, and their value to man is chiefly the intellectual one of showing him to what lengths Nature can go in the direction of utilization of space and adaptation of forms. And the thousand illustrations of the biological principles of evolution which the deep-sea fishes give are worth more to man, in his intellectual and moral development, and finally in the conduct of life, than would be any conceivable number of fish dinners.

Wherefore the bassalians have their place in the cosmos, as clearly as the cod or the herring.

CHAPTER IX

FISHES OF THE CORAL SEAS



HERE are two classes of men, as we count men of our race: those who have been to the South Seas, and those who have not—those who have felt the fascination of the surf on the coral reefs, the wind in the cocoanut palms, “the wide and starry sky,” the deep warm silence of the bush; those who on honey dew have fed; and those to whom all this life is far away, known only through the stories of traders, the annals of missionaries, the glowing pages of Melville or the witchery of Stevenson.

In the South Seas are the asteroids of our earthly cosmos—little green worlds, thousands of them, filled with joyous people, who do not care whether there exist other worlds or other people, as innocent of curiosity as to what happens in London or New York as the folks of Vesta and Ceres are careless of the mightier politics of their planetary neighbors, Mars and Jupiter.

The little world may be a ring of broken corals like a pile of scrap iron, fringed with tall cocoa palms, around a blue lagoon, into which breaks the endless white surf of the tropics; or it may be the sharp crest of uplifted volcanoes over some flaw in the earth's crust. If our island is a volcano's top, it will be velvet-carpeted to the summit with wide-leaved evergreen trees, intertangled with palms and tree ferns, and all inextricably tied together with the meshwork of long lianas. Down through the dense green

* The opening paragraphs of this chapter are taken from an article called “Tutuila (U. S.)” in the “Atlantic Monthly” for 1903, written by Jordan and Kellogg.

bush rush clear, dancing streams, with deep pools for the green sesele or mountain bass, and white waterfalls for the playground of laughing girls. All along, the shores are awash with tall palms, and on the gray barrier reef, the blue sea is awash with white breakers. In the water and on the shore everywhere are the joyous people, shining like clean, oiled, varnished leather, straight and strong as Greeks, simple as children, happy, affectionate, irresponsible and human—such men as there were when the world was young.

There in the South Seas lies Tutuila. Four thousand miles to the southwest of the Golden Gate of California, "the second place to the left as you leave San Francisco," to borrow Stevenson's droll definition, Honolulu lying midway, there you will find the green islands of Samoa. Volcanoes make the mountains and gorges and solid land of these islands; two hundred inches of rain a year, and an ardent tropic sun, make its wonderful forests and bush and graceful palms; the "coral insect" makes its white shoreline and cruel reefs, while copra makes its enduring smell and its shifting civilization. And about it all, is the abiding presence of the ocean.

From every vantage point one sees the blue water meet the blue sky; ever in one's ears is the low growl of the repulsed waters breaking on the guarding reefs; in every direction is it ocean—wide away to the world!

There are four principal islands in the Samoan group, besides six islets. The largest island lies to the west, the others, progressively smaller and, geologically, progressively older, to the eastward. The first is Savaii, forty-five miles long and thirty miles wide, the primitive creating volcanoes not yet cold, their rugged sides overrun with liana-bound forests, as yet impassable to man. Next comes Upolu, forty miles by fifteen, richest in coconuts and in arable land; its town, Apia, the principal one in the islands; its green mountain, Vaëa, with the glossy farm of Vailima

on its flanks, securely within the Valhalla of literary fame. Apia harbor, calm and safe on ordinary days when the trades blow across from the land, changes, in the season of the northwest hurricanes, into a narrow gorge with jagged jaws of coral. Then the great ships are helpless in its tortuous channels, and the sheltering reefs become themselves the sources of the direst danger. It was in 1889, in this harbor, that an impatient hurricane blew its breath on a Gordian knot of world politics, and made ropy spindrift of it.

Fifty miles beyond Upolu lies Tutuila, twenty miles long, and from two to five miles wide. Sixty miles still farther to the southeast, out in the sea, is Manua, almost circular, ten miles in diameter, and oldest of all the Samoan group in geological time, and once most honored in hereditary leadership.

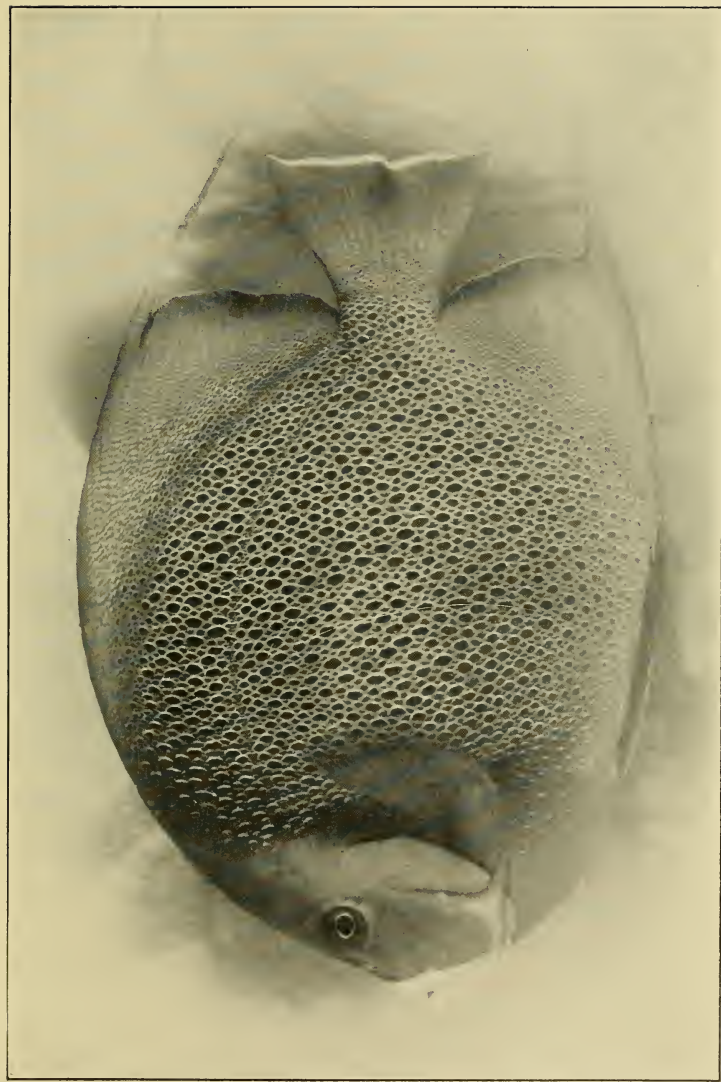
Tutuila is primarily a huge volcanic crater, which has built up the island with the lava it has ejected. This crater of Pago-Pago (pronounced Pango-Pango), is fringed about with steep walls from 1000 to 2500 feet high, almost vertical on the inner edge, after the fashion of craters, sloping away on the outside as the lava flows; two points in its rim, the mountains of Matafao and Peoa, much higher than the rest, and with a break half a mile wide on the south letting in the sea.

The harbor of the Pago-Pago, thus formed within the crater of Peoa, is nearly two miles deep and a mile wide. This size is, however, much reduced by the barrier reef, which forms an unbroken rim about the shore within. But with all this, there is room enough, if not for all the navies in the world, for all the ships likely ever to put into Samoa. The winding entrance shuts out all the surf from the south, and the great walls on every other side make the harbor securely landlocked, whatever the hurricane without. It is, in brief, the one good harbor in all the South Seas, and for that reason it is of high value to a great nation with expan-

sive commercial aspirations. In any case, it is now ours, and is likely to remain so; a mere dock and coaling station in the eyes of our American administrators, but to its people, the colony of Tutuila of the United States of America, a position in their eyes far nobler than to be an independent kingdom. Long ago was Pago-Pago ceded to us, and a coaling station established there; but the whole island came to us only on the division, in 1891, of the Samoan group between the United States and Germany.

The fringing coral reefs of all these islands abound in fishes and invertebrate life. We obtained six hundred and twenty species of these fishes from the harbors of Apia and Pago-Pago, all shore forms of the reefs, there being little opportunity for outside fishing, or collecting from deep water. So large a number is not recorded from any other ports so small as these.

The flat-topped reefs are partly exposed at low tide, and are covered with pools of every size. The reef itself is loose, and broken at the surface, and fissured on the edges; and fishes creep, and swim, through all the openings and crevices. The large dead masses of branching corals are also filled with small fishes, slippery morays winding in and out through the open spaces, while gayly colored damselfishes and butterfly-fishes cluster in the larger cavities. Everywhere in the tide pools and reef crevices swarm brittle-stars, sea-urchins, star-fishes, crabs, sea-worms, and mollusks; under coral blocks, and on the sand floor in shallow water, are hosts of sea-cucumbers (Holothurians) of half a dozen species, while little octopuses go swimming about, scuttling backwards through inky clouds across the pools. The echinoderms are remarkably represented both in numbers of species and individuals, and include some extraordinary forms. At low tide the native women and children wade and poke about over the reefs, collecting *bêche-de-mer*, octopuses, and sea-urchins for food. They



THE ANGEL FISH OF THE CORAL SEAS.

turn the big octopuses inside out by a dexterous jerk, thus disabling them so that they can handily be carried alive.

Many fishes of the coral reefs show protective coloring in the highest degree. Such species usually lie quiescent on the bottom, the general hue being a blotched or mottled gray. But in all the pools abound species which give defiance to all notions of mimicry or protective coloration. There are damsel-fishes, locally called Taupou (the exact cognate of the West Indian names, Damsel, Demoiselle, and Doncella), of every shade of blue except dull shades, and marked with vivid golden or scarlet dashes. These fishes save themselves by excessive quickness and their power of darting into small crevices. Apparently they have no need of protective coloration, and have no fear of any enemies in the reefs. Everywhere about the reefs abound butterfly-fishes, with bright yellow as a ground color, fantastically striped or streaked or spotted with blue or black. Bizarre rainbow fishes, each species bearing streaks or marks of every possible color, abound everywhere, and in all the deeper pools are crimson soldier-fishes, parrot-fishes, and surgeon-fishes, almost all of them colored as brilliantly as fish pigment can make them. No birds, and no flowers of any land are colored more gayly than the fishes of the Samoan reefs. In the open waters we find fishes of the usual protective shades, blue-green above, and silvery below, while in the rivers, the fishes are green speckled, and colored like the stones. It is only within the retreats of the great reef that the mad riot of color develops itself.

If you study the reef-fishes in detail, you will find creeping through all the interstices in the coral itself, little green gobies, the largest half an inch long, and little brick-red blennies no bigger than the gobies, and just as evasive. Our Samoan boy, Afele, had a little boat we called the *Coral Queen*. He would dive in the bay for the coral heads, then laying them in the boat he would crack them with a ham-

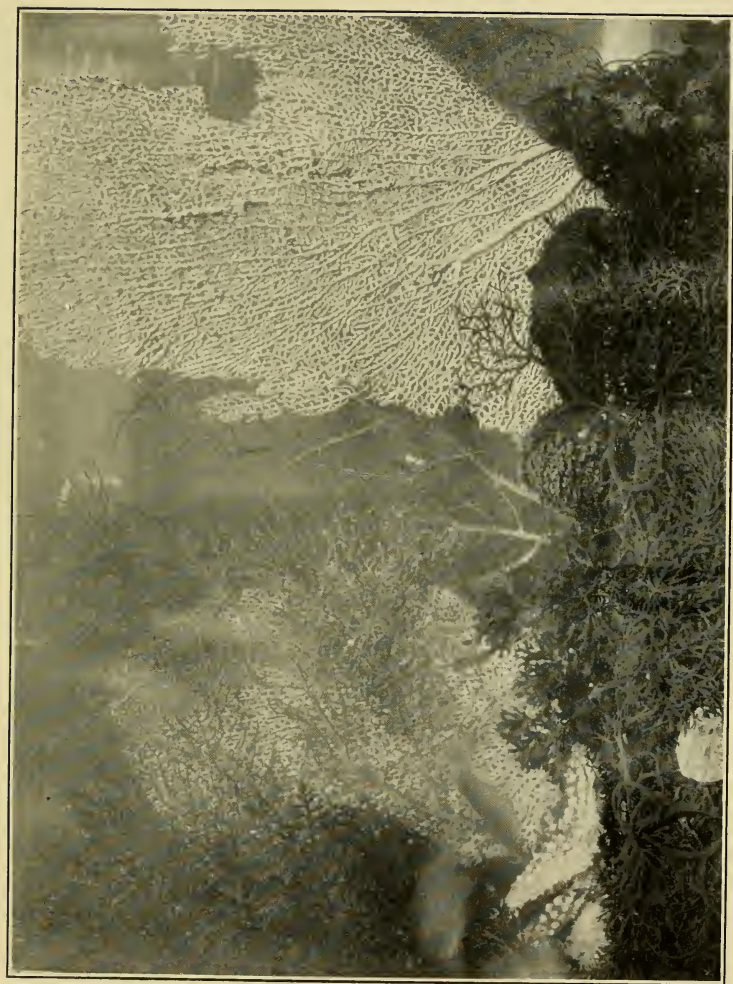
mer, and multitudes of these little fishes, together with young eels and young damsel-fishes, would escape from the débris. In memory of his services, one of the least of little fishes bears the name of *Eviota afelei*.

Next in the crevices of the reef itself, were swarms of eels of many species, only to be dislodged by the poison of chloride of lime, when they will rush across the land with more than a snake's celerity. Many of these are morays, with large mouths and savage teeth—fiercest of all fishes, for they will strike like a snake once they are at bay. The great morays of these reefs reach a length of six feet, and a diameter of six inches. If they are caught alive they will clear a boat of natives, for they come on with upreared head, knife-like teeth, and jaws as strong as a steel trap. Many of these great eels are fantastically colored, but their striking quality is not the brilliancy of the yellow, brown and green of their skins, but rather in the fantastic way the colors are laid on.

In all the little pools, as stated above, reside a multitude of small fishes, some armed with stinging spines, some colored and marked like the bottoms on which they lie, and some defiant of all enemies, flaunting the most gorgeous colors of the garden and the rainbow, but with movements as quick as chain lightning, so that no enemy takes advantage of the fact that they are so easily seen.

It was of fishes like these that Palmerston wrote, in the voyage of Captain Cook:

“At one part of the reef which bounds the lake within, almost even with the surface, there was a bed of coral, which afforded a most enchanting prospect. Its base, which was fixed to the shore, extended so far that it could not be seen, so that it appeared to be suspended in the water. The sea was then unruffled, and the refulgence of the sun exposed the various sorts of coral in the most beautiful order; some parts luxuriantly branching in the water, others appearing in vast varieties of figures, and the whole greatly



IN THE CORAL SEAS (Gorgonias).

heightened by spangles of the richest colors, glowing from a number of large clams, interspersed in every part.

“Even this delightful scene was greatly improved by the multitude of fishes that gently glided along, seemingly with the most perfect security. Their colors were the most beautiful that can be imagined: blue, yellow, black, red, etc., far excelling anything that can be produced by art. The richness of this submarine grotto was greatly increased by their various forms, and the whole could not possibly be surveyed without a pleasing transport, accompanied at the same time, with regret that a work so astonishingly elegant should be concealed in a place so seldom explored by the human eye.”

Outside these pools in the open, are still brighter fishes, shining like polished metal, the brightest of all shades being blue. Only by means of dynamite can these wonderful fishes be caught, and there are still two of these on the reefs of Fiji, that the present writer has seen, but which he cannot catch, and for which he knows no specific name. One of these is a damsel-fish of the most intense blue, the fins golden, and behind the dorsal fin, on the back of the tail, a round spot of the most intense shimmering metallic green. The other is a blenny, golden olive, and paling behind on its long fan-forked tail, to the brightest golden.

In the deeper channels the larger fishes come in, reckless to absurdity in their lavish use of fancy colors, and of elaborately planned “recognition marks.” There is no color not represented among these, and there is no fantastic pattern of an Indian rug, or of a Navajo blanket, that is not devised for some one of these fish.

Outside in the open sea, the fishes are sky-blue, with silvery sides, mackerel, herring, flying fish all alike. The blue is a matter of luster, not of pigment, the color changing with the light, as with a highly burnished kettle.

When the birds look down on these fishes from above, they are colored like the sea, being blue. When the fish

enemies see them from below, they are colored like the sky, appearing silvery. And in the channels between the reef and the shore, the fishes are dull green on the backs, like the water, while the bellies are always white. The fish that burrow on the bottom in the coral sands are all mottled gray like the sands themselves. On the "iron-bound coasts" of black lava when there is no coral, the little fishes are all black. Protective colors clearly predominate even in coral seas, but there are likewise defiant colors which no one can explain, unless it be as aids to help the members of the species to find one another; and these defiant species are protected by a keen eye that catches every movement, and by a speed which is the greatest that any fish can develop.

Inside the reef are many fishes most excellent as food, mostly of the silvery type of the horse-mackerel. Commonest of these is the Atule; and most toothsome and most valuable, forming a perfect chowder, is the big Cavalla or horse-mackerel known throughout the South Seas as Ulua.

Outside the reef are albacores and tunnies, and still farther the great sharks, especially the species with the fins all tipped with black, and the one with the fins all tipped with white, but these belong to another chapter. Flying fish in abundance and of many species swarm about the coral islands, and once in a while you may catch one on the fly. You will wonder at the swiftness of their motion, with their fins held firm like an aeroplane, and only the force of the great screw-like tail to give them impetus. But if you have keen eyes, you will see that this is true, whether you can account for all they do or not. There is an ancient proverb current in the South Seas: "If you cannot account for the milk in the cocoanut, do not hesitate to make free use of it!" If you cannot account for everything you see when you go a-fishing, do not hesitate to keep on fishing just the same!

CHAPTER X

FISHING IN THE AIR



AND so," said Walton, "if I might be judge, God never did make a more calm, quiet, innocent recreation than angling." Thus we have the stamp of authority in favor of our sport, and we may go ahead bravely, and, let us hope, acquire merit. Walton made many interesting discoveries in his jaunts afield, as well as in his philosophical diversions with friends. None was more patent or far-reaching than this, that in angling, the landing of the game was but a small part of the sport. Nothing in nature escaped his eye, as he sat holding the rod on the banks of some limpid stream, and out of his abundant philosophy it is impossible not to gain the impression that he made angling but the means to an end, and that, life afield. Listen as he angles:

"Nay, stay a little, good scholar. I caught my last Trout with a worm; now I will put on a minnow, and try a quarter of an hour about yonder trees for another; and, so, walk towards our lodging. Look you, scholar, thereabout we shall have a bite presently, or not at all. Have with you, Sir: o' my word I have hold of him. Oh! it is a great logger-headed Chub; come, hang him upon that willow twig and let's be going. But turn out of the way a little, good scholar! toward yonder high honey-suckle hedge; there we'll sit and sing, whilst this shower falls so gently upon the teeming earth, and gives yet a sweeter smell to the lovely flowers that adorn these verdant meadows.

"Look! under that broad beech-tree I sat down, when I was last this way a-fishing; and the birds in the adjoining

grove seemed to live in a hollow tree near to the brow of that primrose hill. There I sat viewing the silver streams glide silently towards their center, the tempestuous sea; yet sometimes opposed by rugged roots and pebble stones, which broke their waves and turned them into foam; and sometimes I beguiled time by viewing the harmless lambs; some leaping securely in the cool shade, whilst others sported themselves in the cheerful sun; and saw others craving comfort from the swollen udders of their bleating dams. As I thus sat, these and other sights had so fully possessed my soul with content, that I thought, as the poet has happily expressed it,

“I was for that time lifted above earth;
And possessed joys not promised in my birth.

“As I left the place and entered into the next field, a second pleasure entertained me; ’twas a handsome milkmaid, that had not yet attained so much age and wisdom as to load her mind with any fears of many things that will never be, as too many men too often do; but she cast away all care and sung like a nightingale.”

It is much the same to-day; fish stories are not all fin-breadth escapes, or violent givings of the butt; with the true disciples of Walton, they are rather dissertations on all the accessories of the art, discourses on the various incidents of the catch, which may be foreign to it, or a part of its most exciting history. Indeed, the most extraordinary experiences of every angler are those which relate to the fishes which got away.

A very mathematical and abstruse friend of mine, albeit a good angler, once, while broiling trout, and I toasting bread, in the heart of the splendid forests of Oregon, estimated that if all the *mighty* fish which have got away in divers fashions could be piled on dry land, they would form a piscatorial pyramid which would reach to the moon and half-way back. If the lines lost on these titans could be

joined, they would form a continuous line reaching from the Mackenzie River to the constellation of the fish. There was also, if I remember aright, an exact computation in tons, on the amount of metal lost in hooks on these fishes which got away. All of this suggests that there is a wide and comprehensive field for the teller of fish stories, if only he will take advantage of it, remembering all the while that to the honest angler not all fishing is catching fish.

This sentiment, whether founded on a logical reason or not, has often appealed to me, especially when the wind was in the east and the fish were not biting readily. At such times the angler is forced to turn his mind to other things than flies or lures, and pass, figuratively, from fields of flowers to fields of singing naiads, as did Piscator and his friend; all of which recalls a day on the Florida coast when drifting on the edge of a vast patch of the seaweed called sargassum, which floats upon the Sargasso Sea, about which so much mystery and romance has gathered.

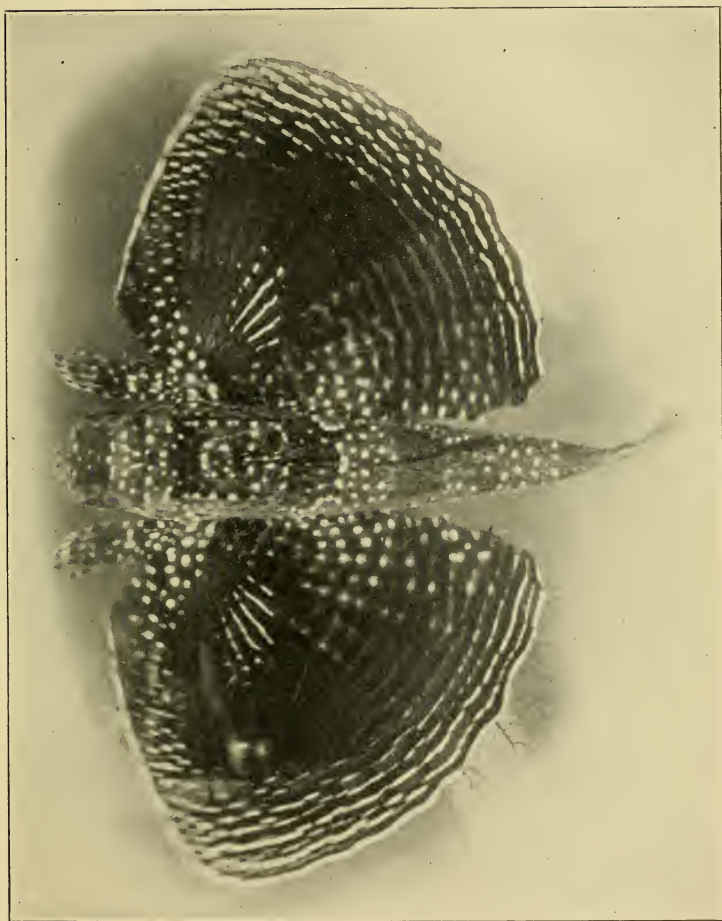
The floating island into which I had forced my boat was cut and traversed by a maze of mimic rivers as rich and deep in cobalt blue as was the Florida sky above it. The garden of sargassum, acres in extent, was a world in itself, extending away, a map of rich olive hue, through which, here and there, the blue ocean showed—a rare and radiant mosaic, sapphires of some titan mine set *en cabuchon* in fields of emerald. The wind was dead, the sun blazing, and rays of light and color appeared to be dancing from the mass where the long swells of ocean came rolling in; waves of blue in the open, waves of green as they reached the sargassum, lifting it in splendid billows of color, rolling on and eternally on, the breathing, sighing, of the sea.

The little blue winding rivers were wide enough for me to scull my dinghy in, and I was presently several hundred feet from the edge of the shore line, or end of my sapphire river. Standing in the blazing quiet I looked around. A hundred miles and more from land, nothing in sight but the

yacht, her black hull rising and falling in sky or water (I could not tell which, as in the dead, absolute calm, the sky line was obliterated), the white sails folding and unfolding as shadows seemed to follow one another over them. I was in a garden miles at sea, a green feathery fabric of most graceful design, normally green in rich hues and tints, it was overgrown, here and there, with the vivid white incrustations of minute lime-depositing animals—*Membranipora*—so that in some instances it was like old lace thrown over green. Every leaf was a mine of life; every frond pulsed with living creatures; every drop of water that rose and fell in this oceanic hanging garden of the Gulf Stream was a world of varied forms.

As I peered down into the sapphire sea, I saw other wonders: halls, loops, corridors, graceful and beautiful, a maze of secluded retreats for countless animals. If some magician had cast a spell over this submarine world the result could not have been more strange. Some magician of nature had given the command that all the forms that peopled the hanging garden should take on colors exactly like it, and every crab, shrimp, every naked mollusk, every fish, was green or green and white, almost the exact tint of the color upon which it rested, a notable illustration of an adaptation to surroundings, resulting in almost perfect protection, as no gull or predaceous sea bird could have seen any of the crabs which lay on the surface, nestled among the myriad mimic buoys, which floated this garden of the sea.

It was but a short distance to another river; indeed, I could compare it to nothing but open water in an ice field, which I had once seen, so I forced the dinghy over or through the sargassum, and entered a new sapphire stream. The moment I did so, there rose two or three radiant gurnards, dashing out of the water, glistening in the sunlight, scintillating with tints of vivid blue, red, yellow and white, their wide wing-like fins vibrating, fluttering, not beating, for a moment, then becoming rigid, and bearing the



THE SEA ROBIN IN FULL FLIGHT.

gorgeous living sunburst away, an animated aeroplane, which *seemed* to fly, but merely soared.

My rod was in the dinghy; indeed, I had undertaken the adventure to fish in these radiant rivers, to see what could be taken beneath this hanging, drifting garden, knowing that among the possibilities were dolphin, bonito or amber jack. But the flying gurnard opened up a new field, and drifting quietly, I baited a small hook with a diminutive green-coated crab. I cast thirty feet into the stream, and waited, intending to hook a flier, and as he rose from the water to play him, as it were, as he ascended.

A strike came, and a blaze of red went coursing along the surface, but not out of it, and the line parted. Again I tried, hoping to play my fish in the air, but either the little river was too narrow, or I frightened them; in any event, I failed. So far as I know, Moseley, the English naturalist, is the only angler who has played his fish on the wing. He hooked a large gurnard or sea-robin, which plunged down, making the little reel scream, then went whirling into the air, in a long flight, taking line from the buzzing reel, to drop with a splash and go up again—a splendid spectacle with its red, blue and yellow flashes of color. This fish story may have the ear-marks of Munchausen, yet it is surely true.

Though not successful with the gurnards, I have often played other fishes in the air, and in the case of the tarpon, I have had time in seconds to try my luck at tripping the slashing, sparkling, animated mass of silver, as it literally climbed into the empyrean and danced in midair. When a tarpon can make a lateral leap of thirty feet, five feet in air, and take twelve leaps in succession, each eight or ten feet in height, one has ample time for the diversion of playing it, as it *flies*.

On the Florida reef there are myriads of garfishes, whose walk in life is entirely on the surface. Long, slender, needle-like, they lie, often motionless, their long teeth-lined

beaks giving them a savage appearance. I found that they preyed at times on very young fishes, creeping up to them with the cleverness of the stealthy barracuda, then suddenly shooting ahead to seize the game, which became a gleaming, scintillating atom of silver in their jaws.

The gars are slow of motion, and when hard pressed, take to the air and wriggle away by a convulsive movement of the tail. By using a very small fly hook and a diminutive sardine bait, I lured the gars, often of fair size. The moment they were hooked, up into the air they went, and standing almost erect, walked—there was no other term for it—away over the smooth water, literally standing on the tail which was whirled furiously about; then when the line would stop the extraordinary rush, the gar would drop, but almost immediately go into the air again, true to its instinct.

These gars were not over a foot in length, and often, when wading over the reef, and lifting the coral to examine its roots for cypræas—the beautiful spotted cowries of commerce, here called micramocks—I would alarm a school of these fishes by throwing down the coral, and they would dart out of the water, and go ricochetting wildly away on their tails, in every direction. None of them ever struck me, though even so small a fish, with its long pointed bill, could, doubtless, make a painful wound. It is well known that the large and powerful garfish or Long Tom of the South Pacific has inflicted fatal injuries by impaling native shell hunters, the victims being literally shot by the living arrows. In the Florida waters, indeed, there are huge garfishes as large as the South Sea species, which might be dangerous neighbors if caught walking through the air.

Once in Samoa the writer of these lines had his man Taua throw a stick of dynamite at a school of great gars. One of these leaped out of the water, seizing the stick as it fell. The air was filled with the green bones and greener flesh of this gar; and of its six feet of length, we recovered less than a foot—the tip of its tail, the tremendously strong

organ with which these fishes shove themselves along the surface of the sea.

I have in vain attempted to hook the large California flying fish. As these lines are written, I have just returned from the island of San Clemente, where, as the guest of Commodore Sinclair of the South Coast Yacht Club, on the "Lur-line," I was fortunate in witnessing with others a remarkable aerial flight of these fishes. We were running slowly down the coast of the island, fishing for the fine yellowtail of these waters, a fish which averages seventeen pounds, and occasionally reaches seventy. The fish were biting fast and furiously, and the reels were constantly singing a brazen barcarole, as the fishes rushed away in the impetuous manner which has made them famous. Suddenly between our yacht and the sea, anywhere from fifty to one hundred flying fishes went into the air like grasshoppers in a Kansas pasture. The school had been charged by the yellowtails, and the flying fish rose so suddenly, and came on with such impetuosity that we were for a moment amazed. I was positive that the big leaping tunas had arrived, and having had previous experiences with flying fishes, shouted to my companions to look out for their heads; as I held my rod before my glasses as a barricade, I saw the most remarkable flight of these fishes I had ever witnessed. Imagine scores of silvery blue-backed arrows, weighing about a pound and a half, eighteen inches long, with four wings spread as aeroplanes, the front pair with a square surface of nearly sixty inches, the smaller ones or ventral fins, of about ten inches. Imagine these animated projectiles fleeing from their enemies coming at the boat two or three feet above the surface, and some idea of the situation can be realized.

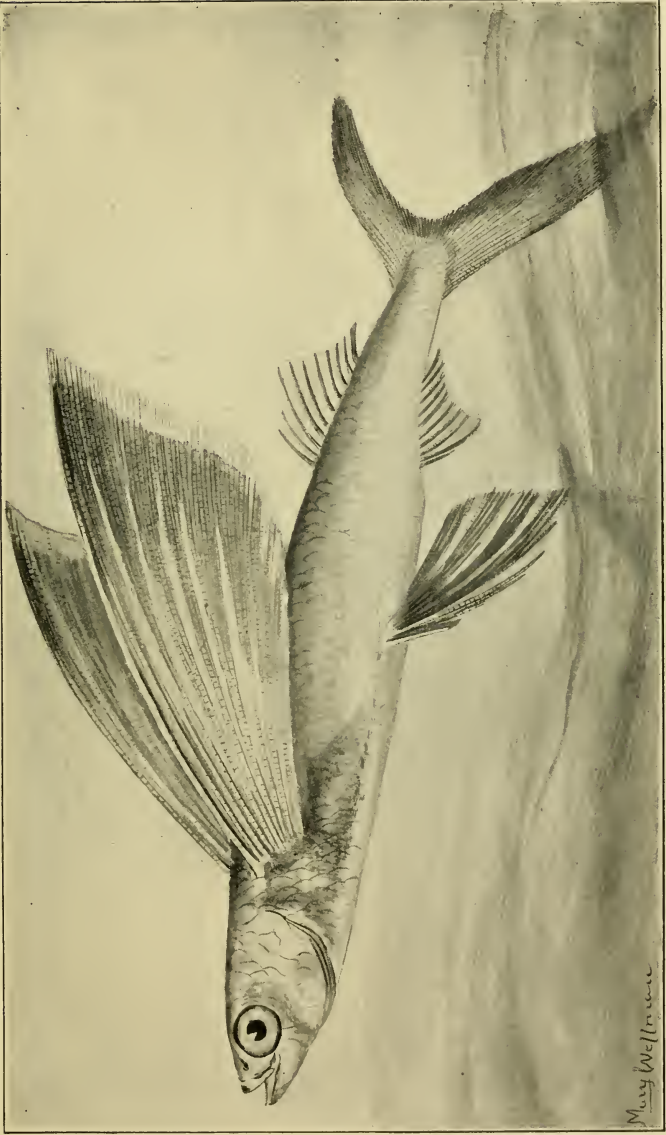
The air seemed to be filled with gigantic big-eyed dragonflies. One of them to save itself deliberately turned a somersault, dropping within a foot or so of the launch. One passed over it, another struck it and others again went

whizzing on ahead and astern, followed, doubtless, by the yellowtails, that were watching them from below.

Two of the latter had struck the rods, and while I was aiming at a bombardier with the butt of my rod, my companions were endeavoring to stem the loss of line and screaming reels before the hardest fighter of all the game fishes. How far the flying fishes soared, it would be difficult to determine; even the naturalist of the party who had been "tutored in the rudiments of many desperate studies," gave it up; but some of the fliers went out of the line of vision, on the wing, by repeated requisition to the whirling tail, which, as in the case of the gar, is the motive power.

I have a wholesome respect for these big staring-eyed projectiles. I once took a teacher rowing in Avalon Bay; she wished to see some of the fishes at first hand. I promised her a glimpse of a live flying fish, but I did not anticipate the sequel. Suddenly a school of white sea bass charged a school of flying fishes, and my boat being in the line of fire, several of these went over it; one struck the teacher in the back as she turned, while another passed near my face; in fact, it was not easy for me to dodge it. I watched the fish to see if it could, or would, attempt to avoid me. But its wings were "locked"; there was not a quiver or a beat; the four wings were spread and held firmly as the fish soared on.

On another occasion I saw a flying fish pass over the cabin of a launch. This time we were shooting flying fishes for bait, and I waited until the flier had reached a fair distance, when I brought it down, exactly as I have shot a quail under similar circumstances. Still again, I was fishing for tunas with a friend one evening in the lee of the lofty cliffs of Santa Catalina. The sun had gone down and a splendid vermilion vestment was draping sea and shore, while the cañons were filling with deep purple shades. Darker it grew, and as our boatman rowed along the kelp bed that fringes all the island, the tunas charged us *cap-à-pie*, and before them came the



SANTA CATALINA FLYING FISH.

Mary Wellman

terror-stricken flying fishes. I could hear the splash of their twisting tails as they gathered headway; and we covered our faces with our hands and waited for the impact. One or two passed over the boat, several struck it, and I heard others strike on the rocks; then a belated flier hit me in the neck, almost knocking me out of my seat, so that the boatman caught and pushed me back. The flier caromed into the boat; and amid our laughter, the boatman baited my hook with the live fish, and a few moments later I had a strike, but the tuna got away.

Many persons have been struck by flying fishes of this California species, or of others. One man was almost knocked overboard at night, while a lady sitting on the sands communing with nature, received a flier fairly in her lap. At night the bay of Avalon, ablaze with phosphorescent lights, is the feeding ground of this species, which is the largest and strongest of all the thirty or forty kinds of flying fishes. They can be seen in fiery lines on the surface, but I have never been able to hook and play one in the air.

The question of the flight of these fishes is constantly under discussion. The two parties line up and hold their ground. In our judgment, and we feel that we ought to know, the flying fish does not fly: it soars, and the beating, fluttering of the wings, seen by laymen who go down to the sea in ships, is caused by the violent screwlike motion of the fish's tail when it rises from the water. The wriggling motion of the tail is imparted to the body, and in turn to the wings which flutter under the impulse, but do not beat in the sense of a bird's wing, and even the fluttering ceases the moment the fish is clear of the water, when the four wings are set, and seemingly locked, as the fish soars away over the sea, followed by its nemesis—the bass, yellowtail or tuna. This statement is written, not as a scientific ultimatum, merely as the judgment of an angler who has watched flying fishes of a different species many times on

the deep blue waters of the Kuro Shiwo, the warm Black Current of Japan.

This view of the case is fully confirmed by my scientific colleague, Dr. Jordan, and by Dr. Gilbert, who also has seen many flying fishes in many seas, but with always the same conclusion as to how they do it. Though I have never played a fish in the air, I have more than once hooked a sea bird which had dived for my bait and soared away with it. I have seen a bald eagle hooked in a similar way, the big bird darting down at the flying fish bait on the surface.

In the South Pacific, on every muddy shore from Japan to the Marquesas, an interesting little fish is found, known as the mud-skipper. One has but to tell the naked truth to relate the most unbelievable of fish stories at its expense. An angler stated to me that in fishing at Fiji he was obliged to wade through a muddy flat on the Rewa River, and around some mangrove trees, and while stumbling along he started what at first he thought was a frog, a little creature which leaped from a root to the mud, and hopped away. On looking closely, he saw that it was a fish, which, far from being discomfited by the lack of water, had crawled out of what is popularly considered its native element, and was feeding alongshore twenty feet from the water, while other fishes were resting on the clumps of roots. On another occasion he succeeded in capturing one of these fishes, with hook and line, out of water, perhaps the most extraordinary angling feat known in the annals of the gentle art. Professor Moseley, naturalist of the "Challenger" expedition, thus refers to this strange fish:

"Hopping about on the mud, beneath the mangroves on the shore, was the extraordinary fish, *Periophthalmus*, at which I had often been astonished in Ceylon. This little fish skips along on the surface of the water, by a series of jumps, of the distance of as much as a foot, with great rapidity, and prefers escaping in this way to swimming beneath the surface. In Trincomali Harbor I have chased one which



PERIOPHTHALMUS CLIMBING A TREE.



skipped thus before me until it reached a rock, where it sat on a ledge out of the water in the sun, and waited until I came up, when it skipped along to another rock.

"The fish are very nimble on land, and difficult to catch. They use their very muscular pectoral fins to spring with, and when resting on shore, the fore part of the body is raised and supported on these."

Many anglers who habitually fish from boats have had fishes leap into them, but to see a fish deliberately go ashore, like a turtle, or rather like a frog, to hunt for food, is to witness one of the wonders of angling. But then the mud-skipper is not much of a fish.

My colleague, who now takes up the pen, has likewise had a good many experiences with this curious little goby. At one time, after helping to dedicate a new Samoan Church, he found a pile of stones at the upper limit of high tide, on which a dozen or so of mud-skippers had crawled to wait until the tide came back. The largest of these were about six inches long. My Samoan men rolled the stones away, and the fishes left exposed in the rocks were about as easy to catch as lizards.

There is in Pago-Pago a pointer dog who spends most of his time in pointing for these mud-skippers, as he sees them crawling about in the mangrove bushes in their search for insects. He has never caught one, but he knows that there is something uncanny about a fish that has such habits. So he points and barks, hoping that a fisherman will come to help him. But no one ever pays any attention to him; and so, if he is still alive—this was in 1902—we may be sure that he is pointing and barking yet.

But this is not the only fish that has this habit. There are other species of gobies related to the mud-skipper, moreover there is a small black blenny in the South Seas, who watches on lonely lava rocks, above the reach of the waves. It never climbs trees, but sits on rocks, and it is as quick as the liveliest lizard. The black coat of mail of the wrecked

man-of-war, "Adler," on the reef at Apia in Samoa, is covered with these fishes just above watermark.

Still other blennies in other countries lurk on the rocks or hide themselves in the hanging fringe of fucus, as the tide goes down. All these are colored like their surroundings—black on lava or on iron, olive green, or grass green if the seaweed requires it.

In the East Indies, there is also a perch-like fish, the climbing perch, which leaves the water to creep about on mangrove or palm. This fish and its relatives are provided with a special breathing structure or "labyrinth" in connection with their gills. But we have never caught it on any of its forage trips, and we must leave to others the story of its habits.

CHAPTER XI

ANGLING FOR SHARKS

I know a magic circle in the Sea
Etched on the blue with pale gray coral sand ;
A mountain sank there once, and patiently
Its widening eddies stiffened into land
With lazy surges flapping on the strand.

RHYME OF MARY ATOLL.



THE biggest fish you can take on a line is a shark, but we do not fish for them with a fly. To land the beast in the basket it takes the biggest kind of a hook, with an iron chain, and a whole ship-load of eager assistants, or a whole wharf full of idlers, to pull on the rope and chain. Here is a record of a few successful days of shark fishing.

Away down in the warm South Seas, not far from the equator, and also not far from the meridian, where you sail out of the end of to-day into the beginning of day after to-morrow, lies the charming atoll known as Mary Island. It is a narrow and irregular circlet of coral, about five miles across. Like other atolls, it is made of a rim of broken coral a few feet above high water, and a few rods wide, inclosing a deep blue lagoon, which on the west side connects with the sea by a narrow break a couple of rods wide. Most of the atoll is bare, the broken corals piled up like scrap iron, for we must understand that the coral polyp does not build the reef. The reef is made of their dead skeletons of carbonate of lime, broken and piled up by the waves, and finally cemented into a hard porous rock by the lime which comes from the coral structures themselves.

On the east side of Mary Island are palm trees and other

vegetation, and it is doubtless inhabited by a few men who dry the cocoanuts for copra, and gather in the lagoons, for the Chinese trade, the black sea-cucumber, which sells as *bêche de mer*. These atolls, of which there are hundreds in the South Pacific, are considered, rightly we think, to be a product of the slow subsidence of this part of the sea. The other islands of this region are all volcanic, high, sharp and made of lava. Around each one, at a little distance from the shore, is a barrier reef, built up of broken corals, a shallow channel separating it from the island. On the outside of the reef are the living corals in great multitudes and variety, each with its myriad small polyps, individually like the sea anemones of farther north, but each one secreting carbonate of lime in the cross partitions of its body. Most of these are less than an inch across, some very much less. But there are certain corals made by a single large polyp, which may be a foot in diameter.

The reef corals grow only in shallow and very salt water. Wherever a river flows in, there is a break in the coral reef.

If we imagine the volcanic island to sink slowly, the reef would slowly rise to correspond. If this goes on long enough, the island will vanish, leaving no trace, or only a rock or prominence in the center of the lagoon. In this fashion, as Darwin has pointed out, and in no other way of which I can conceive, Mary Atoll was formed, and in the same fashion as Mary are built all the rest of the Phoenix group, and all the rest of the cosmic asteroids marked on the map as Gilbert, Marshall, Ellice Islands and the rest.

All these lagoons swarm with fishes little and big, colored like a dozen rainbows, with suggestions from the Chinese, Spanish and other gorgeous flags. Outside the reef they are even more abundant, from the little green gobies less than an inch long that creep about within the corals, or the pearl fishes that hide in the stomachs of the *bêche de mer*, up to the biggest of sharks, and it is the sharks we have now under discussion.

Just beyond Mary Island at high noon, with the sun overhead, the good ship "Moana" was obliged to stop for a couple of hours to adjust some pieces of machinery. At once we got a long line, baited it properly, and sank it into the depths, in hopes of luring some freak of the deep. At the same time, we baited a great sharp hook with a chunk of meat, and hung the chain off the stern of the boat.

The deep-sea hook was hauled up in due time, with a large fish attached, as stiff as a log, as we drew it through the water. It proved rather unexpectedly to be a familiar fish, the wall-eye, or pike perch of the Great Lakes, which lives no nearer Mary Island than Lake Winnipeg. Unlike the current writers of unnatural history, we did not jump at rash conclusions in this matter. We did not suppose an underground connection between Mary Island and Lake Winnipeg. We rather suspected a connection with the ship's ice-box, the "Moana" being an Australian steamer outbound from Vancouver. And this, indeed, was the case, for the wall-eye was still frozen, and we could imagine the silent humorist below decks, who had drawn in the line and put a fish on the hook (to save us from disappointment). So we cast the wall-eye back into the sea, and turned our attention to the lure for sharks.

The sharks were likewise interested. A great gray fellow swam near, looking bright green under the blue water, the white tips to his fins shining like emerald. These white tips scarcely show when the fish is dead, but in the water they furnish for this species a most conspicuous recognition mark. The species, by the way, is *Carcharias insularum*, a shark of the open sea, first taken by the "Albatross" in the exploration of Hawaii.

The big, lustrous, bullheaded fellow was nosing the bait. He was very dubious about it, and left off and on, for half an hour, before, with one great gulp, he swallowed it. In a minute he was flapping madly in the air against the stern of the boat, with all the cabin passengers tugging at his

chain. His three-cornered, saw-edged teeth, went as souvenirs to the ladies. His fins were used as wings for Bosco, the messenger-boy in the ship's circus, and in his stomach we found an ice-cold wall-eye from Lake Winnipeg. Clinging to the shark were half a dozen black shark pilots or remoras, a curious fish of the open sea, which rides free in the ocean, clinging to large fishes by a sucker on the back of its head.

The shark was young and unsophisticated, its length being only about twelve feet. On our casting him back into the sea, without jaws or insides, the other monsters became interested, and one more of about the same size had time to take the hook before the steamer started again; and he, too, had in his stomach a frozen Canadian wall-eye from the Great Lakes of the North.

The Bone Key, in Florida, Cayo Hueso, commonly called Key West through a spurious notion of etymology, is likewise a coral island, but very different from these of the Pacific. It is part of a great barrier reef, the outermost of a succession of such reefs, which make up the Peninsula of Florida. It is the mangrove, which everywhere in the tropics east and west, turns barrier reefs into lines of islands. Its branches reach down into the sea and take root on the bottom, making a wonderful tangle, a gathering place for rocks and mud and trash, and a wonderful refuge for little fishes. Thus the fruit of the mangrove has done much for Key West, and some earth disturbance has lifted it a little above its natural level, making a large and well-marked island.

On the north side of Key West is a little sheltered harbor where the fishermen land with their boat-loads of live fishes, kept in the hold or well, which is pierced with holes to admit the water, which, of course, runs no higher than the water line. And here they kill their fishes to suit customers, throwing overboard the offal, and this in turn fills the bay with sharks. We caught two from the little wharf there,



THE REMORA, OR SHIP SLAYER.

each about sixteen feet long, and commanding the combined strength of all the idlers in the neighborhood. They are not exactly game fishes, but they fight hard, and their vicious dispositions make every man and fish feel that every shark caught is a good riddance. On these sharks, too, were several shark's pilots, but at Key West the species is different, larger and more slender, and with a black stripe down its side. The open sea remora is all black. Moreover, this species does not cling to the shark through all its vicissitudes, as the true remora does, but cuts loose hastily and shifts for itself at the first indication of trouble. If such an arrangement were possible, this species would turn state's evidence whenever a shark is caught.

In Alaska lives the great nurse shark or sleeper shark. It is a great lumbering beast, twenty feet long, and weighing, I should think, a ton or more. It fights the whales, biting out pieces of flesh with its jagged teeth. But mostly, in these degenerate days, it lies about salmon canneries, to feed on offal. It gorges itself at high tide, then goes away somewhere to sleep it off, when the tide is falling. It will take the hook readily enough, but only steam tackle can draw it in.

Just beyond the little town of Fort Wrangel in Alaska, at the north end of Wrangel Island, where the water is gray with the glacial mud which comes down from the Stickeen River, there is a large salmon cannery. By the side of the cannery is a small bay covering an acre or so, flooded with water at high tide, bare, and filled with fine gray silt when the ebb goes out. Here to the cannery comes, every day, a sleeper shark or two, to gorge on salmon heads and salmon offal. Into this little bay, if the tide is high, the shark goes to sleep it off. When he is comfortably disposed on the bottom, the tide goes out, and there he is. There is twenty or thirty feet of tide about Fort Wrangel, and between ebb and flow there is a great deal of difference. The shark flounders helplessly for awhile, and at last is suffocated, and

as the mud dries, surrounded by a fine firm layer of dried clay, he gives up his shark ghost. When the tide comes in, there he lies—in a firm matrix. The silt of the Stickeen is sifted over him, and he is far along on the way to be a finely preserved fossil.

In some such fashion as this, the best preserved fossil fishes have been laid away. In similar way, the remarkable collection of fishes of the Cretaceous age preserved in models of clay in Ceará, in northern Brazil, have been deposited. These are in the mountains called Serra de Araripe, and are many hundreds of thousands of years old. Nevertheless, among the species of gars and tarpon-like fishes buried in this silt, there are some which have the eye-balls perfectly preserved, and some have the black spots and stripes which lie under the scales, still showing perfectly as in the fresh fish. A hundred thousand years hence, some geologist will have a wonderful find at the north end of the little cape above Fort Wrangel. May these pages last long enough to give him the proper pointer!

The most dainty of all my shark fishing was undertaken off Misaki, Japan, near the offshore Island of Oshima. Kuma Aoki, prince of Japanese fishermen, did the work, while science and I reaped the benefits. Kuma brought out his long lines, which he calls dabonawa, a quarter to half a mile long, baited the many little hooks, and sank them to the bottom of the sea. When they came up, there were many fishes on them: rock fish, rose fish, all bright crimson in color, and most of them new as to species. In this same lot were most of the peculiar deep-sea forms dredged years before by the British steamer "Challenger" in the Gulf of Sagami. But of all these creatures, the most interesting was a little black sharklet, not more than a foot long, jet black. It lives down there in the depths in absolute darkness, and is small enough to be a household pet. But the remarkable thing of it is, that it carries its own lanterns, and makes its own way in the dark. On each side of the

belly is a large patch, which is luminous in the night. There is in St. Petersburg a painting of this shark, made at Misaki in the night by Dr. Peter Schmidt, who worked with no light but that which the little shark gave out while set in a jar of salt water.

We named the little shark *Etmopterus lucifer*, for Lucifer, you know, means light-bearer. The first one of that name, you know, carried light into very dark places, when he was shut out from heaven. On another page there is a picture of it.

Along with the thresher shark, in most warm seas, there lives another big shark—the hammer-head, which is one of the strangest beasts in all the seas. And his strangeness is all in the shape of his head—quite like a hammer—very broad, very short, with a big eye on each end of the hammer. The hammer-head has a bad reputation, which it does not deserve, for it never hurt any man so far as we know, and spends its days destroying that curse of the sea, the sting ray. The sting ray, of any species, is a kind of big skate or ray, with a big bony saw-edged spine, or sting, near the base of its tail, with which it can inflict a ghastly cut. The slime on this saw-edged spine often produces blood poisoning in man or fish. The hammer-head doesn't care for this, but goes after the sting ray as a hog does for a rattlesnake, tears him to pieces and swallows him. If you cut open the next hammer-head you catch, the chances are that you will find his throat full of stings from sting rays, stuck fast in the skin, like a bunch of arrows.

Then you will understand what a faithful servant this grotesque shark really is, and you will have sympathy for him in all his troubles. Besides, the sting rays feed on oysters, and by the natural current of events, the more hammer-heads there are in the harbor, the more oysters there are for you.

CHAPTER XII

THE TROUT OF LOS LAURELLES



ALL roads should lead to Los Laureles, but for some reason best known to the good padres of old, the real California pioneers, who blazed trails along the Coast Range as far as the Santa Lucia, and beyond, they do not.

One might arrive by sea, landing in the surf at Carmel, or walk in over, or through the Sierra Gabilan, or Corral de Tierra, from Salinas, but we preferred to find it by following El Camino Real—the King's Highway—over which Junípero Serra and his band of faithful followers walked and prayed, consecrating missions in the cause of Christianity, and discovering new lands, not to speak of trout streams, for the king. You can now follow this trail in a general way by train from San Diego along shore, passing some of the most attractive of the old missions or their ruins, as San Luis Rey, San Juan Capistrano, Santa Barbara, La Purissima Concepcion, Santa Inez, to San Luis Obispo, San Miguel, Nuestra Señora de la Soledad, as far as San Carlos Borromeo, in Carmelo.

Surely these old padres, philosophical and reverent men, were anglers. They had precedent of no mean order in good men of old who were "brothers of the angle"; and is not St. Zeno the titular protector of the fly caster, the lover of quiet rivers, where one may reflect and enjoy the best that nature has to give? So, in some way, the missions and their good builders are associated in my mind with trout, purling streams, ripples, shallows, crystal water over clear clean pebbles, deep shadows, valleys of live oak and madroño, and angling.

Possibly this is mere sentiment, as I cannot explain it in a logical fashion; yet perhaps I connect the two from the fact that, wherever you find a mission in California, not far away will be discovered a trout stream. It may not be very large, as the San Luis, near San Luis Rey; the San Juan, at Capistrano; the San Gabriel and La Honda near that mission, or the Santa Ynez, hard by La Purissima Concepcion, but it will be a very good trout stream. Hence, what more natural when passing the fine old mission of San Carlos Borromeo in Carmelo, which overlooks Monterey on the King's Highway, for a party of anglers to stop and hail a Californian after this fashion:

"Good morning, señor. Pardon for stopping you, but did you ever hear of any trout fishing in this vicinity?"

The gentleman of Spanish lineage took off his sombrero gallantly to the lady, and replied, "Trout, señor? The finest stream in the world is over there, beyond the mission, the Rio Carmelo; you can see it through the trees glistening in the sun, and you can trace it up the Carmelo Valley for ten, yes, twenty miles into the Gabilan, and a thousand pools. Trout? Why, señor, Padre Junípero Serra ate trout from that stream nearly one hundred and fifty years ago. Padre Crespi fished in it in 1770. Captain Rivera y Moncada, the governor, and Felipe de Nervé knew its pools. Trout? The finest in California, señor, at Los Laureles and beyond," and the Californian took off his sombrero again, touched his horse with the big spur, and pushed on, doubtless wondering who the Americano could be, who did not know that there was trout, the best in the world, around the mission of San Carlos Borromeo in Carmelo.

So, in California, first, in gentle and reverent fashion, find your mission, and the trout will be forthcoming, will not be far away, as the old padres had a gift for discovering the most beautiful places on the coast for their missions, of which a trout stream is generally, and justly, a part.

Thus it came about that we left the coast line at Del

Monte, near Monterey, where the sea could be heard piling in upon the sand dunes, and the strong wind made music in the splendid grove of pine and cypress; music of the sea, in rich gradients of sound, rising and falling, swelling, until the air was filled with mystic strains. The old ranch of Los Laureles, up Carmelo Valley, about seventeen miles from Del Monte, became our objective, and we decided to go over the Salinas pass, which wound up the Corral de Tierra mountains, fish Rio Carmelo down to San Carlos Borromeo, that stands, a lighthouse to souls, overlooking the not distant sea.

It is well for anglers not to make trout, of all fishes, the prime objective of a day's sport, as no more uncertain game loves the sunlight. To-day he is yours for the very asking; to-morrow, the most luscious lure will not tempt him. One hour he defies you; the next, gazes at you from some ensconcement of the fishes, and knows you not, as you pass him, casting, by.

I believe I accumulated some of this angling wisdom years ago in a certain trout domain in New England, where there were streams and pools, ripples, cascades and drooping trees; where everything was fair and promising to the eyes for trout; but it required superhuman patience to lure them, and many a day I scored a blank. Yet on these very days when lures were unavailing, the creel empty save for fern leaves, I found they were not for naught; that the real fishing day was a composite of the weather, the wind, even if it was from the east, the splendid colors of forest trees, the blue tourmaline of the sky that topped the stream amid the trees, the flecks of cloud mirrored on the surface. The delight of anticipation, the casting, the play of the rod, the exercise of skill, the quick turns in the stream opening up new vistas, the little openings in the forest, through which were seen distant meadows and nodding flowers—all these went to make up the real trout fishing, the actual catch being but an incident among many delights.

Just how long one could be content with mere scenery in lieu of trout, I am not prepared to say; if pushed to the wall I confess that when fishing I prefer trout to scenic effects. Still, it is a very impracticable and delightful sentiment with some truth to it, the moral being that the angler should be resourceful, and not be entirely cast down on the days when the wind is in the east.

I am aware that this method of angling is not in vogue with some, and would be deemed fanciful, indeed inane, by many more; yet it is based upon a true and homely philosophy, not of to-day, the philosophy of patience and contentment. "How poor are they that have no patience," said Othello. It is well to be content with things as we find them, and it is well to go a-fishing, not to catch fish alone, but every offering the day has to give. This should be an easy matter for the angler, as Walton tells us that "Angling is somewhat like poetry, men are to be born so."

In this satisfactory frame of mind, the sorrows of an empty creel discounted at the start, we left the fine pines, cypresses and oaks of Del Monte, its vistas of ocean and mountain, and drove down into the little valleys over the Corral de Tierra mountains, in search of Los Laureles somewhere on the Rio Carmelo, down in the Santa Lucia range. We rode for several hours on the Salinas grade; climbing the sides of picturesque hills where

"The mountains kiss high Heaven,"

and from the summit of some of these peaks on the divide, an extended and beautiful view of the San Lucia and Gabilan ranges was obtained. They are less rugged than the Sierra Nevada, with long sloping reaches rolling down into the valley,

"A misty camp of mountains pitched tumultuously."

It would be difficult to find a fairer land than this in March or April; a land running riot with wild flowers, stretching

away as far as the eye can reach, acres, miles of golden red-hearted poppies merging into tracts of purple, crimson and lemon-yellow. Along the road are patches of blue lupines, and among the wild oats whose awns jangle in the wind, the yellow violet of California and many more. Groves of oaks and tree-like brush in vivid greens race up the hillsides; madroño and manzanita form little parks; but the fields and fields of flowers constantly arrest the eye. They are everywhere; now filling some little potrero, to disappear in the chaparral, coming again over the divide, where the soft wind ripples over fields of grain, where shadows race with cloud-flecks, and all the world runs riot with color, tint and shade. In the center of the valley, a little lake, Laguna Seco, nestled, the water a vivid blue divided by a covering of emerald-green weed, so one could well imagine that a gleaming tourmaline had dropped from the skies in this out-of-the-way part of the world. This gem was directly below us half a mile, perhaps, and we could see two or three other mountain roads winding below, little houses here and there environed by great ranges beyond Mount Fremont in the Gabilan, rounded peaks, crimped mountains and faults, forming other and countless valleys away to the south where the Big and Little Sur came piling down through rocky gorges to the sea.

The valley of Carmel, like all good things, was always over the next range, just beyond, but after a while we reached the real divide, and looked down into the Rio Carmelo and its fair valley surrounded on all sides by the spurs of the San Lucia range, garbed in oak and chaparral, with groves of huge live oaks in the valley, and the river marked by long sinuous lines of vivid green willows, laurels, cottonwoods and alders, with here and there a scintillating gleam, the little arroyo itself, as it flowed on and on, down to the old mission of San Carlos Borromeo and the sea.

Down the long trail we ride, occasionally meeting a rancher; coming nearer the live oaks, passing between low

forests of manzanita, the garden of Carmel unfolding, the green of hills and mountains becoming more vivid, and the masses of flowers that carpet the land forming a literal field of the cloth of gold; surely verdure and wild flowers run riot in the Santa Lucia valleys. Then we come to the lower reaches of the trail, and a strong pungent incense fills the air, as the coach brushes the trees; the laurels, here great bays, protesting loudly in sweet odors, suggesting that Los Laureles must be near; and suddenly, we bowl out into the road in the valley of El Carmelo, a perfect environment for the little river that is seen running away along the mountains to the south.

Up a long country road we go; now in the open, again shut in, with live oaks on every hand, listening to the music of the meadow larks, the notes of the plumed quail—*kwook-kwook-kwook, wook-kwook*—borne on the wind, and suddenly reach Los Laureles, seventeen miles up the cañon from the sea, directly on the highway, and fronting the river that here flows along the base of high mountains.

The ranch house is a long rambling building surrounded by palms, the front yard glowing with roses of the California variety, size and perfume. At the north end stands a splendid live oak which covers two hundred or more square feet, and could protect a regiment of men. Here we find that rare thing which the average country inn never has, immaculate neatness, with good cheer. Then, there is real cream and fruit from oranges to apples; no mosquitoes or pests, a breeze that comes up from the sea over seventeen miles of trout pools and radiant flowers; in brief, Los Laureles appealed to us, and some of us determined to live there always.

The mail comes once in a while,—though you can talk with the world over the telephone; but you never do. Your nearest neighbors are the blacksmith and trout—just over the road down by the creamery, as Los Laureles is a real ranch, and all that the tenderfoot's imagination painted it.

I fancy Los Laureles is two or three hundred feet above the sea, just enough to give the winding, capricious little stream a voice, which comes on the wind through the pines, luring one to its pools, its alcoves of verdure. And so, having greeted H——, the rancher, I slipped on an old hat with a pedigree, and waders, and in the language of the nature writers, answered "the call of the wild." It took me down into the bed of the cañon beneath big oaks and sycamores, then to the wash where high freshets had left polished stones and boulders—a mimic glacial moraine. All the time the murmur of the Rio Carmelo was growing louder, the high Santa Lucia range against which it coursed, forming a sounding board; then a miniature forest—sycamores, alders, vivid cottonwoods, tall groups of *Juncus* or rush in moist places, patches of cactus here and there, through which the tall stems of *Brodiaea* forced their way, balancing the cluster lily with its lavender hues, and now and then, the blue-eyed iris, cheek by jowl with the Spanish bayonet. There were black and white willows, and over them black live oaks, sycamores with clustered mistletoe, and elders, while along the edges of the forest grew groves of rippling wild buckwheat and sorrel with patches of scarlet larkspur, buttercups and meadow rue.

Louder came the rippling laughter of the waters, then almost trapped in the maze of verdure, I threw myself bodily into the brush, and literally fell crashing out upon the sands of the little arroyo, where Junípero Serra and de Nervé fished, and found solace for all the senses, and doubtless "tongues in trees, books in running brooks, sermons in stones, and good in everything."

It was a fair little river at this point, widening out to one hundred or more feet, flowing smoothly over dark pebbles, with deep shadows in its upper reaches, then dashing out into the strong light with just the ripple one might have expected. Here I waded in, crossed to the other side in the deep shadow of the Santa Lucia, stood silently for a while in



ONE OF THE AUTHORS CASTING FOR TROUT.

Rio Carmelo near the old mission San Carlos Borromeo, California.

the cool, purling waters and then slowly unreeled for the cast down stream.

Forty feet went the alluring "Coachman," in a little rifle where the waters boiled and bubbled around a submerged rock; as the fly dropped, out of the chaparral at my shoulder came the *ca-ca-kou ca-caa-kiou* of a plumed quail, startling in its intensity, and then a dazzling swirl, the whipping of the resilient split bamboo, and something was racing away across the pool, then up into the air, tossing vagrant sunbeams which seemed to change to silver; up again, and down stream with a rush, forcing me to give line, as the four-ounce rod bent frantically.

Perhaps you have played a two-pound Carmel trout fresh from the sea—a hard fighter at its best, and know all about its devices, its resources and cunning. If so, there is little for me to say, but I fancy the solitudes of Carmel, as charming as they are, have as yet not lured many anglers; it is a joy to come, something in anticipation, and so I may linger on the battle of this fighter, as he shot across the pool to accomplish my undoing. I turned him gently after the second leap, and he came in on me like a big rainbow; came so fast that I could not reel in the slack, then dashed down stream, taking me along to save the line; and then with a wild leap into the air, tossed my fly at least eight feet upward; in fact, the bend of my supple rod brought it that distance over my head, leaving me stunned, appalled, at the suddenness of the disaster.

When the trout first leaped, I was convinced that he was a *two*-pounder, of rich color and due proportion; but as I now contemplated the scene, with retrospective indulgence, I saw that he must have been at least a *five*-pounder, a sort of *Dios tutelar de rio*; certainly there was no one to dispute it.

I had been fishing with light flies, and at my next cast in the pool, two trout rose, and snapped at the little "Coachman." The big fellow missed—how often it is thus—but

the other fell upon the hook, yet was so small that my rod literally carried him through the air behind me; so I dropped him back, forgetting that this size trout, at least at Los Laureles, cooked in olive oil, rolled in the white of an egg, in powdered cream crackers, is a viand fit for the gods; and that I had been asked to catch the supper in that particular size.

Taking two or three trout at a time is possible here, but this is merely an angling extravaganza, a triple duel; so I stripped off two of the flies, and prepared for another *six*-pounder. The little reach where my game escaped led through the brush where there was a pronounced rapid, perhaps the one I had heard, and here the stream dashed over small boulders and ran down beneath the alders and willows with loud acclaim, the water foaming capriciously. I pushed through the brush that met here and there, and came to a widening, spreading rapid, a long reach of splendid water crested with molten silver, with walls of emerald, against which the slope of the mountain rose. Midway in this, I cast, sending the diminutive "Coachman"—an alluring thing for dark waters, thirty or more feet up the rapid, dropping it just at the fall.

What prearrangement of fate, what lucky star ordained it, I do not know, but the fly fell just where a trout was lying vigorously stemming the current, waiting for the very thing that came promptly on time, as perhaps preordained a million years ago, and then a new sound joined the strange melody of king fishers, a plumed quail and meadow larks: a quick *st-s-s-s-s*, the staccato of a little reel that buzzed its clicking notes on the perfumed air, and the fish took ten or twenty feet of line, and fled up the leafy cañon away into the crystal waters of the pool beyond, where, having room to spare—a veritable sea in this little river—I let him go, following slowly, and played him from the gravelly reaches near shore. Then, insistent, he took me out in mid-stream, toward an old root; but this I gently foiled,

and watched him leap and pirouette along the surface, nearly throwing me as I stepped upon a moss-grown stone.

Just then I heard a laugh, and turning, there, on the sands, sat a boy with a long willow pole and a string of trout hung upon a willow wisp.

"You're havin' the time of your life, mister; wanter buy my trout?" he said.

A moment before, I would have taken affidavit that I was alone, seventeen miles from a postoffice or telegraph station, seventeen miles from anywhere; alone in the heart of a little river, shut in by almost impenetrable trees. One might think, that here man would be safe from the temptations, allurements and follies of the world; yet in the very heart of this angling paradise, in the very temple of Nature, this tempter appeared, armed with the most infallible and seductive lure that ever laid an angler low. Shades of Junípero! there is graft even in the shadow of San Carlos Borromeo.

In ample time the trout came in, and he being of goodly size, as became so sturdy a fish, I waded down shore to a certain alder tree, where I had hung my various trout (having forgotten my creel); they were gone! I ran over in my mind the possible enemies of game of this kind: 'coons, otter, eagles, ravens, wood rats; and then my eye fell upon a single small Robinson Crusoe-like human footprint on the sands, and I saw it all—the boy had *borrowed* my trout to sell them to me. I had resisted the temptation (knowing I had a good string), but it was a grave mistake. I should have bought those trout.

A friend of mine, a clergyman, once asked me to send him some suggestions for a "nature sermon." So I found a comfortable place among the trees and jotted down the incident, which involves a great moral principle somewhere, exactly where, he will doubtless be able to discover; and perhaps some angler will be there, and derive solace and

comfort from it; but the moral of this specific incident seems to me, to be, to buy trout on any and all occasions.

At noon the breeze died down, and the little river became a disk of steel, in which the shadow of the mountains and the trees cast deep reflections; but as the day wore on, it came again, stronger than before, a full strong wind, blowing from the sea; before it, I waded slowly down stream, casting every few feet, with long throws, covering the water in the shadow of the willows, having rises, and taking trout of the broiling variety in abundance. I frequently had strikes on the back cast, and turning quickly, played the little game from that side, and as the shadows deepened, my luck grew apace.

The little Carmelo wound in and out, always changing. Now there would be a long reach of rapid water; then it would widen out, and seemingly disappear, flowing through a rich undergrowth beneath which big trout were lying, and tree-climbing for flies became a feature of the landscape.

Suddenly I emerged from a narrow brush-choked channel, and faced as fair a stretch of water as fly ever floated over. On one side the mountain rose precipitately, covered with chaparral, wild lilac and manzanita with round blue apple-shaped berries; and near the water, clumps of yellow mimulus; and just beyond, a blazing red patch of wild honeysuckle, down from which came reaching in, a big log, on which, a moment before, a jacksnipe stood. Behind me rose the dense willow underbrush, and to the right a little graveled beach, the white granite boulders extending out into the stream like stepping stones. I waded carefully out of the deep shadows, and when I had room for the back cast, and while a chattering kingfisher did his best to warn this trout, dropped my fly into a little pool; *z-e-e-e-e-e!* went the reel on the instant; the swirl and cry from its brassy throat sounded together, the little rod bent, the fish doing its best to force me out into the sunlight, taking line,

dashing up into the air, turning somersaults in its terror or amazement at this strange invisible thing that held it fast. For a few moments I played it from the shadows where it tugged and matched its astonishing strength against my light rod, then came at me, turned quickly, and shot away for some distant pool, like an arrow from a well-bent bow, making the little reel hum and sing, actually taking me out upon the shingle as it made the turn and went down stream.

Then I checked it and saw it leap out into the sunlight where my friend the kingfisher made a half dive for it, forcing me to close in; the fish sulking, hammering on the line like a salmon, then breaking away again, as becomes a salmon trout, like a bar of silver, and fresh from the sea. Again and again he took feet and yards of the delicate line; in fact, he overmatched the tackle, as I had put on a delicate single gut leader of the smallest size, and a diminutive "Kamloops," and had myself steeled for the inevitable, fully expecting to see the line come whizzing back; but it was the unexpected which happened; by some special dispensation of good fortune I held him, and slowly brought him to net, not a *seven*-pounder, not the one that got away, but a good fish, that would have tipped the scales at one and a half pounds. This was luck, and enough, so I stopped while the fish were biting, found a path up through the ranch by the stables which stood against the Santa Lucia range with big live oaks and green fields reaching away, handed the catch to the chef, and told, to sympathetic listeners, the story of the *eight*-pounder that escaped, and later came in to my full reward, broiled trout, Los Laurelles fashion.

Then, in the cool evening in the ranch house, came cigars and fish stories of various vintages, and sleep in the Santa Lucia air that swept from the east where the Sierra Nevada lies; and when morning came, more trout, new pools and vistas.

Los Laureles is by no means the head of the Rio Carmelo which reaches the sea in the bay to which Vizcaino gave the name Carmelo, more than two hundred years ago. The most charming indentation on the whole coast of California is Vizcaino's "Enseñadita de Carmelo." You may wade on, and on, for miles up into the range, with the scenery ever wilder, with new plants, greater steeps; but I found the lower reaches more to my fancy, and he would be hard to please who could find fault with this little river, as it winds down the Carmel Valley through a meadow rich in greens, with flowers of every hue, fruit and grain, as we found it one April, after a winter of heavy rains, and before the "limit" man had wrecked the hopes of honest anglers. When the sun came over the Santa Lucia, it caught me crossing a little potrero where black live oaks reached up to the mountains, and I plunged into the thickets of alder and willow farther down, where the river had made a sharp deep bend, and tall sycamores and laurels filled the intervening space, over which could be seen the distant ranges still wrapped in purple.

Here the stream was well wooded, and I waded through tunnels and alcoves of green, dropped the fly into dark pools in which the mountains seemed inverted, and played the game in impossible places; now taking them out from rifts where the willows caressed the water, and then—tell it not in Gath! climbed trees, not altogether for the view, or for exercise, but for reasons best known to anglers; indeed in these happy hunting grounds I spent much time contemplating my fly high above me, and climbing for it; but these are mere details; when the fly was not in the tree top, it was being towed about by a trout, so there were compensations.

The river always flowed by the willows, alders and laurels; and the laurel here is the fragrant bay-tree, not the rhododendron, which grows farther north. Now the stream runs by some steep bank, eating into it, cutting its

way, then coming out into the open, gleaming and scintillating, to quickly dart under the trees again. And so, as the angler waded down, casting, playing, losing fish, or catching them, he passed from sunlight to shadow, and out again, continually, while new vistas of the ranges and valley were constantly coming into view. Then the valley widened out into a vast green river of verdure, fields of oats, barley and wheat rippled in the sun, and little ranch houses clustered beneath big oaks.

The valley seemed terraced here with mesas rising one above the other, with deep cañons which broke through the range, and reached other fertile valleys far beyond, so that the little river starting in the wilds of the upper range, now flowed peacefully through miniature towns, by ranch houses, under the live oaks; and every rancher in all that fair valley seemed to have his trout pool.

The best fishing I found along the shadows where the verdure came down and hung upon the water, and again over little riffles where the river glided over polished rocks and left a little vantage point in which a trout could poise waiting for its prey, unreal or substantial. Sometimes the brush was so thick that I was forced to climb the cliff and walk around, from which point of vantage the entire valley could be seen; and amid the trees, bits of river, like emeralds in settings of turquoise, and above, the high mountains, and over all, distant vistas of the Santa Lucia and Gabilan melting into blue and tender tints far over the edge of the world. And so, casting and wading, now and again riding, I followed the Rio Carmelo down toward the sea, where a little laguna within the sand dunes holds the waters; where the steelheads or salmon trout, in the fall, winter and spring, come in from the outer sea, where I have seen them five miles offshore.

Little wonder the padres of old cast the fortunes of San Carlos Borromeo by this fair stream and valley—one of the garden spots of California, where the wind is soft,

where nature is always in a tender mood, the land of mañana and the setting sun. Casting in the lower reaches, wandering along, going with the stream, one can imagine the tolling bells of San Carlos echoing up the fair valley, calling the faithful from the deep pools of the Carmel.

And so one fishes, and the days slip by, at Los Laureles, and later on, when winter comes, and the trout are resting and growing for the coming year, the anglers in the land of the orange, lemon and lime down south where the violet blooms in winter, and orange petals are the only snow-flakes, tell their wonder tales, and one, in expanding humor dwells upon a certain Carmel Colossus, a *nine*-pounder, that tossed the "Royal Coachman" ten feet in air and got away.

CHAPTER XIII

THE GOLDEN TROUT OF THE HIGH SIERRAS, AND THEIR ENEMIES



THE purpose of this chapter is to call attention to one of the most beautiful things in this world, and to appeal to the anglers in behalf of its preservation. The Sierra Nevada, the great backbone of California, extends for a thousand miles within the State, besides other thousands of miles of Cascades and Selkirks and Alaskan ranges to the north, and still other thousands of miles of Cordilleras in the regions toward the sun and beyond the sun. From the flanks of these mountains flow thousands of brooks, from the melting of the snow which gives the range the name of Nevada, the "snow-clad." In all of these streams which trout can reach, there are trout in great abundance and variety—for the most part, the rainbow trout of the coastwise streams, modified a little for mountain purposes into other varieties, called the Shasta trout and Gilbert's trout. The former is in the north, the latter in the south, and no one can tell them apart in the El Dorado country where the two forms meet.

The highest peak in the Sierra Nevada is Mount Whitney—15,000 feet—and its drainage on the California side falls into the Kern River, a great, clear, green, swift stream, among the granite rocks, its waters slipping along like oil; a river with rippling shallows and deep cold eddies, the perfect home of trout, and the veritable home of the crimson-sided, black-speckled, fine-scaled, white-tipped form of the rainbow trout which the writer named years ago for his

colleague, *Salmo gilberti*. Thirteen years ago Professor Gilbert first brought it home from the south fork of the Kern, at Soda Springs. Other men had taken it on the hook, but Professor Gilbert was the first to *see* it.

The Kern River trout goes up all the streams as far as it can, but it cannot rise above the waterfalls. A trout will work its way up any cascade, when the ascent is humanly or rather salmonically possible. But there must be a limit in these wild regions, and when this limit is reached, the stream above is barren, that is, it is barren unless some one deliberately stocks it, or unless the trout in it were there before there ever was a waterfall.

In the case of the Kern, the trout are older than the falls. In three different streams these ancient fishes still remain. In each of these the trout, through long continued isolation, has become a species distinct from the parent stock, *Salmo gilberti*. The first of these singular trout was described by the writer a dozen years ago under the name of *Salmo aguabonita*, for the waterfall Agua Bonita or gracious water, which shuts off the trout in Volcano Creek. This species proves, however, to be the one from the south fork of the Kern River. The species in Volcano Creek has been named *Salmo roosevelti* by Dr. Evermann, and the other from Soda Creek is called *Salmo whitei*.

Mr. Stewart Edward White, visiting these mountains called the attention of President Roosevelt to these trout and to the danger of their extinction, and the President sent Dr. Evermann to complete the investigation, with the result that three species were made known, instead of the single *Salmo aguabonita*. The Bureau of Fisheries, through Dr. Evermann, has recommended that the west flanks of Mount Whitney be included within the National Park, that no fishing of golden trout be allowed for three years, that the species be introduced into the barren streams of the neighborhood, and that rigid limitations be placed on the number any one may take.

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Collectively, all three species are known as the golden trout of Mount Whitney. All three of them are bright golden, with orange fins and an orange stripe along the side. Like all true trout, they are spotted with black. In *Salmo whitei* this spotting is profuse and evenly distributed fore and aft. In *Salmo roosevelti* the spots are mostly on the posterior parts. The other species is somewhat intermediate in this regard.

All of these trout are mature at the length of six to eight inches. The streams in which they live are near the timber line and open to bird or man. They take the hook readily, and are thoroughly unsophisticated.

So long ago as 1875, Mr. H. W. Henshaw noticed the *Salmo aguabonita* in the waters of the south fork of the Kern. He says that they may be taken in any sort of weather, at any hour of the day, with any kind of bait. "The color is usually very bright, and for beauty this species takes rank with the foremost of its kind, and it has been well called the golden trout. In the clear current of a mountain stream, a flash of sunlight is scarcely quicker than the gleam of gold and silver seen for a single instant as the whirling waters are cut by one of these trout, as he makes a rush from his lurking place at some rare morsel which is being borne past him."

The rocks over which these streams flow are of bright granite and quartzite, gray and red. It is supposed that the color is protective, for the fish are colored like the bottom. To a bird looking into the stream, the deception is perfect. It is supposed, though no one knows, that the colors have been attained through natural selection. The redder the fish, the better its chance to escape the fish-hawk and eagle. If this is not the cause of the color, no one can guess any other, and to escape its enemies through resemblance to natural objects is not a trait of the fish alone, but of hundreds of other creatures in these and other mountains. But whatever the cause, nothing in nature is more beautiful or

more graceful than a golden trout, alive in these clear, icy, sun-lit waters.

Alive, I say, for a dead fish, withered, dusty, warped, sticking to the dried leaves, is no pleasure to any one, and a golden trout at best is but a bite.

And this is the point of it. Let us keep them alive; more than half these trout are dead already. A dozen or two have been taken by naturalists, a few dozen more by anglers, and the rest have fallen prey to the meanest creature that infests the mountains. Already his empty whisky flask is scattered along the shores of every joyous river. Already the little trout are rotting on its bank. Already the local papers tell of the exploits of John Smith and his cronies, who caught 450 golden trout with a fly in one morning; of Peter Robinson, who sent a box of 380 home to his club; of John Jones, who was equally ignorantly and greedily wasteful of beautiful life. I do not write the real names of these folks, because I do not know them. Such people ought not to have any names. It is a waste of good atmosphere to call them anything.

I read to-day in the *San Francisco Chronicle*, of five large parties which camped all summer on Volcano Creek, feeding on *Salmo roosevelti*. Another party reports leaving 300 on the bank, because they could not eat them. Another of the same sort boasts of having stowed away 65 fishes for breakfast.

Trout hogs we call them; but in doing so we owe a contrite apology to the relatively well-behaved swine. Let us exterminate them if we can, for we must save the golden trout, the trout of Roosevelt and of White and of the gracious water.

CHAPTER XIV

THE LURE OF THE RAINBOW

Be mindful aye your fly yo throw
Light as falls the flaky snow.

—IZAACK WALTON.

Here comes another fish that I must tickle, and tickle daintily. I've lost my end else.—BEAUMONT AND FLETCHER.



THE biggest rainbows have their home in a land of dreams on the east slope of the Cascade Mountains of Oregon, where the great fir forests have fought for ages to hide grim beds of lava—showers of rock, which bombarded the earth untold ages ago. Shasta with its glaciers is not far away, and from the slopes of Mount Pitt, 9700 feet in air, the angling invader looks down on the fair lake of Klamath, environed by lofty peaks, crests of mountains that roll away in every direction; some capped with eternal snow, some garbed in tints of pearl, or blue of infinite beauty, all volcanic, the aftermath of a time when Titans lived, and played at bowls among the lofty peaks and ranges of the Siskiyou.

Away to the north is a wonder of the world, Crater Lake, a dead volcano, a mile above the sea, filled with water nearly half a mile in depth, a gleaming sapphire suspended like the roc's egg, on top of the world; indeed, I could not divest myself of the belief that Klamath with its shallow waters, thirty or more miles in length, fed by eternal and icy springs, was not the last word of a mighty volcano burnt out and dead.

As I found it, Upper Klamath Lake was two or three days

from anywhere. We reached it from the little station of Thrall, by a picturesque mountain railroad which switches back and forth, climbing the lofty Siskiyou over the edge of the world, crossing or skirting deep cañons, carrying one above mighty forests, by splendid streams, cascades and falls, twenty or more miles to Pokegama. Here we took a six-in-hand stage for a thirty-mile ride through the fir and pine forests of the Cascade range, often crawling along the side of a steep cañon, high above the rushing Klamath, on its way to the sea, or through mysterious forests, dark and beautiful, where the wind was loaded with the perfume of things untouched, uncontaminated and resinous.

The very road was a rich, dark red—the ground bark of giant firs that had lived and died here ages ago. It wound through the forest according to its fancy, a mile above the sea, then dipped into some cañon half a mile lower, always the forest reaching away and around the visible world; always the murmur of the distant sea played by the wind on pine needle castanets, rising and falling, a requiem of the forest glades; then on the eastern slope, which overlooked the land of the Modocs, thirty miles distant, pitched down to lands but half a mile high and discovered Keno, a little hamlet that did not look its name; then over level plains along shining waters, rolled into Klamath Falls in the crisp evening air.

Long before this, down the road, we had heard of big trout and laughed at the stories. The natives evidently took us for tenderfeet, and spoke of ten, and even twenty-pound trout without emotion, as though such a catch was an everyday affair; but when we wandered down to the rushing and muddy Klamath and saw hundreds of trout rising and leaping, caught glimpses of monsters two feet long and broad of back, the realization came that here, indeed, was the land of the biggest rainbow, the piscatorial elysian seen but in a dream.

But these colossi would not rise to the fly, and we were

told of a region thirty miles beyond, at Pelican, where this hiatus could be avoided.

"Why, boss," said a native, who had a string of fish to sell, just as we were going aboard the steamer, "I've seen a twenty-four pound rainbow caught on a 'Benson fly'; a ten-pounder caught on the second fly. I disrecollect what the doggone thing was called, but it looked like a cross between a hellgrammite and a wum, while on the leader, I reckon that was a Benson, too——"

I felt it my duty to save that man. Thirty-four pounds on two flies was enough even for me, so I broke in.

"Hold on, my friend; no matter about the weight on the third fly; but that Benson fly, where can I buy one; what does it look like?"

"Look like?" repeated the native. "Why, stranger, it looks like what it naturally is—a grasshopper, discovered, patented, copyrighted by Jedge Benson, the whitest man in Oregon. It's a dead shore proposition and don't you forget it, is the Benson fly, and that fish on the third Benson weighed for——"

But just then some one shouted "All aboard!" and I rushed down the gang-plank, and the steamer pulled out into the stream. Surely she was a near relative of that mystic ship with three decks and no bottom, which sailed in a heavy dew, as she was as high as a frigate, but drew only a foot or two of water. She was a stern-wheeler, picturesque and accommodating to a fault, and somehow she recalled pictures of the ark I had seen in an old family Bible long ago. The captain and engineer were good fellows, thorough sportsmen; and in some vague undefined manner I gained the impression, very possibly an unjust suspicion, that transportation and mere business, was not the real object of the *Winona*, but merely an excuse or subterfuge to enable the genial owners to reach the pools of big trout, the tule lands, forests and wocus marshes, where the blue-winged teal, the mallard, deer and grouse made their home. This may not

have been so, very likely it was not, but I was in full sympathy with the idea; it appealed to me, in many ways. As it was cool we sat on the gun deck about the boiler, which had done service in a sawmill, told stories with the engineer, and watched some loggers play pinochle, occasionally going on deck as the steamer ran into little impassable creeks, rivers or inlets to wood up, leave a passenger or letter.

As I stood by the gang-plank at one of these landings, named Odessa, a passenger going ashore stopped and said, "Mister, Hank Martin asked me to tell you that the weight of the fish on that third Benson was fourteen pounds. He said you'd understand it."

Nowhere was the lake over twenty feet deep, and everywhere could be seen the evidence of large trout leaping or rising—a fascinating, alluring sight to the angler who, perhaps, has been educated on a diet of quarter pounders.

The following day, with Mount Pitt behind us, a giant icicle against the sky, we rowed out into Pelican bay, beginning near the deep pool at the entrance of the little river, rowing along shore from pool to pool, casting in the shadows of willows, quaking aspens, giant firs and pines; in the gloom of great peaks, and over waters clear as crystal. No more fascinating region for fly casting could be imagined; indeed, the natural beauties of the spot were so attractive that the eye was constantly lured from the cast to charming vistas of mountain, hill or river.

The water was smooth and clear, and as we drifted slowly into the deeper channel or succession of pools which lined the shore, rainbow trout could be seen rising everywhere as far as the eye could reach. Standing up to cast, I saw columns of trout; platoons of individuals of heroic size and comely shape moving slowly out of the way—a fascinating, inspiring spectacle.

We were in the shadow of Pelican mountain and its forests and a dark fly—a "Kamloops"—of large size was used,

a "regular pigeon," my companion remarked as I sent it whirring through the air, and dropped it, dry fashion, as near a swirl as I could. Surely this was the ecstasy of angling, the sum of all Waltonian joys, to drift along this land of deep shadows and radiant tints, and cast and cast, each fly falling a few feet farther to the east, so covering all the ground. Here was where Beebe, the champion big Rainbow angler, took his record fish. Off that long log Walker killed his famous ten-pounder. Near here Pinchot killed a fifteen-pounder on a five-ounce rod. This splendid pool by the Point of Rocks was made famous by Bush, and so on; each separate stretch of shore line seemed to have its peculiar history, recalled as we drifted on into the ever changing lights and shadows of this land of dreams.

I had made, perhaps, ten long and I fear unwieldy casts, necessary on account of the perfect clearness of the water, when I dropped the fly into a little snug harbor, beneath a quaking aspen; and according to angling ethics here, permitted the fly to lie a second, then began to move it toward me with an upward inflection of the split bamboo. The big fly had cut the clear surface perhaps a foot, when the water broke in a violent swirl; there was a flash of gleaming silver, the rod bent violently as I instinctively struck, then a dazzling radiant vision went whirling into the air, and I, with quivering nerves was playing my first big rainbow, or was it playing me? Here is a very fine point. How it came at me, how it went repeatedly into the air, how I nearly fell overboard, are matters of personal history, and need not be dwelt upon; but for the first few seconds that living rainbow, which went pirouetting over the little river on its tail, throwing impossible aerial swings and leaps, filled a large space in my imagination. I fully expected a repetition of my first fiasco, and could not believe that the big fly would not come whizzing at me through the air, shot by the frantic fish.

Again and again the rainbow leaped, a silvery radiance flashing in the sunlight. dropping back to dash about the

boat, to come in with a rush, faster than I could reel, to stop, and balk and protest high into the balmy air.

As nearly all these rainbows had a trick of charging the boat, my companion had pulled lustily for the open water, away from the deep shadows of the aspens, out into the open bay, where the white dome of the distant mountain rested upside down; and in this mimic snow-bank I played the rainbow, brought it to the quarter; then my companion dropped the oars and stood by with the net. But not yet; the sharp-eyed fish was outfought, but not caught. It balked at the deadly thing, and made a splendid rush away, and tugged and resisted, testing every inch of line, leader and rod with sturdy hammering blows in the full abandon of its second wind. Again I reeled it in; again it broke away, then after fifteen or twenty minutes of fighting, I brought it in, my companion netted it in gallant fashion, and lifted it in.

You have, perhaps, never seen a big rainbow fresh from the icy pools of its choice. Know, then, that this fish, this seven-pounder which I held upon the scales, was a thing of beauty, a joy forever beyond dispute. Its back was well sprinkled with ocelot-like black spots; the color a deep green, the lower surface silver, while over all seemed drawn a filmy gauze of some old-rose fabric, of inexpressible delicacy and beauty, which was intensified along the median line in a band of pink and rose and other tints that produced all the colors of the rainbow, and gave this radiant creature rank among the birds of brilliant plumage.

This was luck of a special quality, and taking the oars, I pulled in shore, back to the deep shadows, and held the skiff while my companion cast; giving a notable exhibition of cleverness and skill in placing the large fly exactly where he wished, seventy-five or eighty feet away. No line or leader struck the clear water first here; only the gentle dropping of the lure, imitating the dash of some insect, which, before it could rise, would be seized by the voracious rainbow, that

almost invariably went into the air in protest, swinging itself with lusty blows, to drop and dash away.

Anything but fly-casting seemed profanation, in these clear, silent pools and dells, and there should be an unwritten law among anglers to fish for trout with flies alone. Worms, spoons and similar engines of death, are permissible when trout for food are necessary, or a specimen is needed which cannot be taken otherwise; but for sport the fly alone should be employed; indeed, the big Wilson spoon used here, and upon which a twenty-two-pound rainbow has been taken, according to my companion, Mr. Alfred Beebe, is fatal to the sport, taking all the fight out of a fish, which becomes, either from fright or despair, the antipodes of a fish of smaller size taken with the fly.

Back into the shadows we row, and again I take the rod and successfully land the game; and so, alternately, we fish with varying success, the points and nooks, at the foot of this splendid mountain, that rises a mile above the sea. We drift up a dainty little river where the banks are lined with willows and aspens, again with tules of countless hues, or masses of wocus with their broad leaves, always in view of the forest and fir-clad mountains; and at noon we go ashore and up under the giant firs, where my versatile companion proves his superlative rank as a woodsman.

Perhaps the day is devoted to trout, and we have in the locker several three- and four-pounders, which are broiled over the coals of dead and dry willows, which we collect for the purpose; and then, shades of Lucullus, what a feast! broiled rainbow trout *à la* Beebe, toast, of which I am a past master (when it does not fall into the fire), tea of a special royal brand, really from far Cathay, trout being the *pièce de résistance*; or, perhaps the day is dedicated to ducks, as well as trout, and blue-winged teal and mallard are passed around and picked by the victorious anglers, then baked in a famous Dutch oven, which Walker has brought in his skiff, while the ladies, who have joined us at the feast, look critically on.

Then, after dinner, an hour for pipes and cigars, lying on the springy pine needles, the air filled with the incense of pine and fir, while the quivering aspens along shore make gentle music as they fan the air. The catches, the leaps, the giants lost, the high jumpers of the morning are reviewed, and fancy and imagination given free rein. Such is life in the open in the big rainbow country.

In the afternoon we move on up the little rivers, casting gently in becoming fashion, constantly regaled by the beauties of the scene. Two streams have special claim to our admiration. They flow through the lowlands from giant springs four or five miles to the east. Skirting Mount Pelican, we cast the pools of Short River, then push the skiff into a narrow brook lined with tules—green, red and yellow—where the way is often partly blocked by little islands of wocus, or clumps of tussock grass, cat-tail, and sedge, which, under the heavy frosts, are taking on alluring tints of red, gold and brown.

A hundred yards of this, disturbing jacksnipe, mallards, wood ducks and swamp wrens, and we come out into Crystal River—as fair a mirrored little stream as fly ever fell upon. Here are countless pools and points, sweeps and nooks where giant trout lie, and glancing along the clear surface scores of rippling circles can be seen—tell-tales of the living rainbows below. Here the willows fall into the water, or just above it, forming alcoves, nooks and corners for the watchful game, into and over which the flies drop with unerring aim from my companion's tip.

It has always been my theory that fishing should be but an incident in a well-rounded day, and this Crystal River more than demonstrated the saneness of the idea, as there were enchanting vistas mirrored in the clear water, mountains of snow, others in vivid green, pearl and mauve. The tules that raced away with the soft wind that rippled over them were fields of color; the base pure white, the center green, the tips all shades of brown, red and yellow; and so

clear was the dark water that we could barely tell tree from reflection, water from sky. The willows were changing, and the quaking aspens taking on tender tints of red and yellow, telling of the transition of seasons, and that the breath of winter had withered and blasted as it stole along. If the trout would not rise to the fly, and they often would not, scorning the most delicate lure, the longest cast, there was the pleasure of trying, amid enchantments of many kinds.

We cast over all the pools, up the little river of delights, and came casting, drifting, stealing down Crystal River; sometimes with luck, again failing to secure a rise; hooking monsters which always got away, bringing others to the net that fought and leaped until in the meshes. Sometimes we trolled, when casting did not avail; and one afternoon, when sky and lake were clear and still, we pulled out into the great lake, arousing gulls, ducks and big white pelicans, which were floating like ships in the mirage.

Over to the east rose the grim walls of Modoc Point, telling of the lava beds and the dry desert slopes of the eastern Cascades, and all about, green eternal forests of fir rising to distant peaks and ranges on top of the world. The surface of the lake was a gleaming mirror, and here and there swirls, circles and splashes told of the rising trout for vagrant Ephemera which were blown offshore. It was almost impossible to disdain the surroundings, so radiant, so beautiful were they, and only the sudden buzz of the reel, the heavy bend in the rod, forced me to remember that we were fishing, not dreaming.

I was facing the bow—a preposterous position in trolling—when a powerful surge on the eight-ounce split bamboo literally brought me up standing; then I turned, giving line under my thumb, to see a silvery body rise and roll over at the surface, a premonition of big game. My companion bent to the oars, believing the fish would rush at the boat—a clever trick common to this tribe of rainbow; but nothing

of the kind occurred, the fish making a clever dash the other way, reaping feet and yards, despite my pressure on the line, and forcing the not unwilling conclusion that I had hooked an unusual fish; indeed the veteran at the oars whispered behind me, "Saints and sinners, but he's a corker! don't lose him; easy with him!"

Up to this moment I had been struggling to my feet, then turned, playing the fish, holding the rod well bent with one hand, positive that I would lose it, but when my right hand closed over the line, and for a moment I stopped the rush, and experienced the strong vibrant thrill that comes at the test, when the rod is proving its strength and elasticity, I felt that I had the game, had it hooked strong and well.

It was a true premonition, yet so fierce was the following rush, so heavy the weight bearing on the line, so extraordinary to me the power of the trout, that I could not believe it possible, and called for help, asking my oarsman to back up on the line as, apparently, I could not move the game, and having a very light enameled silk casting line, and a single gut leader of the most delicate size, I did not wish to take too many chances. So I reeled as the boat was backed up, and made fifty feet of the one hundred and fifty the fish had taken, and in fancied security played the rainbow one hundred feet away.

Now it came to the surface and rolled over, it was literally too big to jump; then it thrashed about, dashed from side to side, plunged downward to rise and bear off, making the resilient rod groan in spirit, putting it to the severest test it had ever had, and almost forcing me to the conclusion that it was outclassed by the unseen fish whose strength and size could only be conjectured.

There is such a thing as tearing out the jaw in a long delayed fight. I had lost a fine thirty or more pound salmon in this way two weeks before, so I pushed matters, took the field and led the fighting; pressed it to conclusions, fought when the trout rested, still fought when it fought, checked

its wild rushes, stemmed its plunges as well as I could, yet twenty minutes passed before I could safely reel the fish to the quarter where, as it surged ahead, we could, for the first time, note its full proportions.

Then seeing the boat, recognizing the enemy, it plunged, and I was forced to give line for fifty feet, when I rounded it up, and slowly reeled it in, and again had the fish on the quarter, while my comrade manned the net, and I endeavored to lead the game into its toils. Never did it show the white feather; not once did it stop struggling, or shaking its massive head; always bearing off, trying to break away, hammering on the delicate line sturdy, menacing blows.

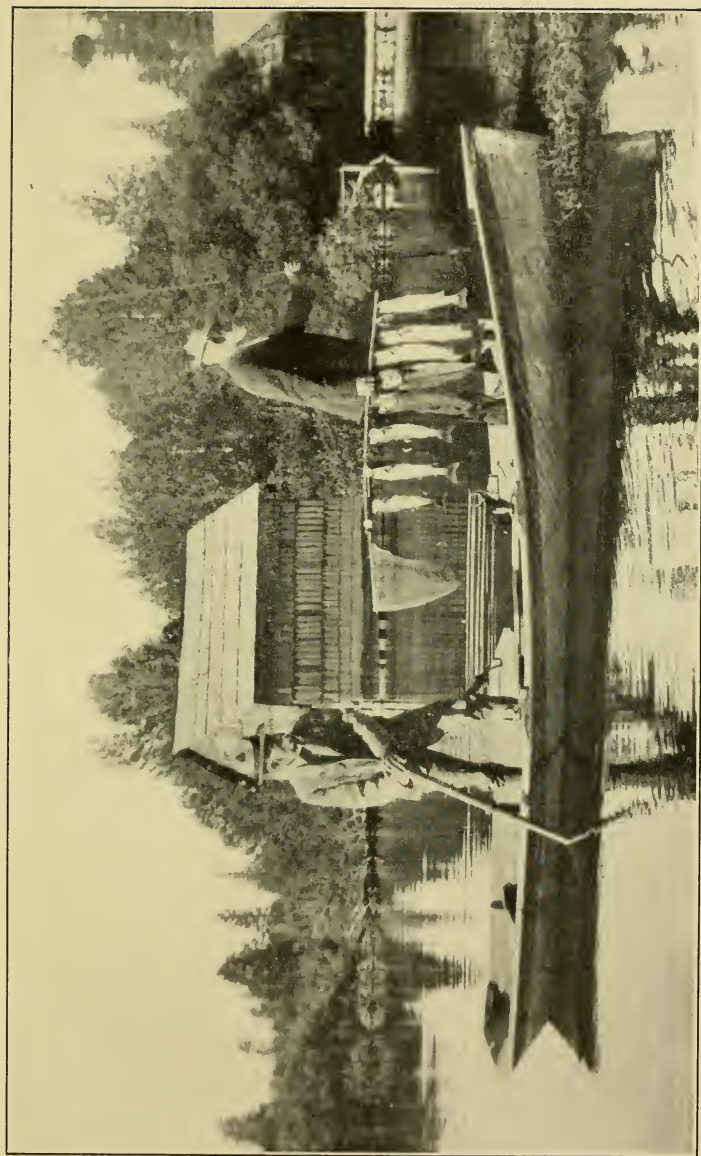
But there is a limit to even a big trout, and in a lucky moment the net slipped beneath it, and struggling, gleaming like a real rainbow, the fish was lifted in, its misery ended, and held up by the angler that all might see its glorious tints and color; then the scale was hooked into its mighty jaw, and as the trout swung, the pointer stopped at a little less than ten pounds—"glory enough" for one day, week or year, for that matter, the only regret being that the game was not taken with a fly, the lure being a little spinner which I had used for black bass on the St. Lawrence, and which was not much larger or more conspicuous than a shining, newly-minted picayune.

This fish, which in its best condition must have been a fifteen-pounder (I have had legal and expert advice on this point), was two feet one inch in length (I generally say three feet when telling the story), and seven inches in height at the widest portion. Its proportions were beautiful; its eye clear, its tail big and suggestive of power. Its skin was very light—delicate greenish-mauve, if there is such a tint, spotted with diminutive ocelot-like markings over the back, the sides old rose, gleaming with all the splendors of abalone—altogether a thing of beauty, a thing to talk about on winter nights far away, where it may be seen on the walls of the Tuna Club in the vale of Avalon.

Such a fish did not whet the appetite for smaller game, so we descanted on its beauties; and as the sun was dropping behind the old volcano of Pitt with its gleaming glaciers, we turned and rowed slowly in, while there settled over bay and lake the marvelous vestments of approaching night.

The sun was sinking behind the peaks to the west; the Modoc cliffs to the east were bathed in old rose that deepened every instant into vermilion, scarlet, pink, in varied shades, until they seemed to blaze in the dazzling effulgence. Lower dropped the sun behind the great snow-capped mountain that hung nearly ten thousand feet in air, like a crystal suspended from the sky, and as it passed, a strange, marvelous blue, the deepest purest blue ever seen by human eyes, blue born, it might be, in the heart of some sapphire or flashed from a giant tourmaline, settled on all the mountains that encircled the lake. Myriads of phantom forms seemed to come stealing, creeping silently from every forest glade until all were encompassed, all but the eastern Modoc hills, which still blazed in old rose and vermilion tints, while the surface of the water was a kaleidoscope of color, indescribable, a medley of tints that seemed to reflect, not the blues, but the pinks and yellows. Darker grew the blue, until the hills and mountains were set in bands of deepest sapphire, then, slowly across the lake the deep-blue shadows of the mountains began to move—sapphire peaks, over seas incarnadine.

On they went, each mountain clear and distinct, racing over this sea of dreams, staging the lake of Klamath with unwonted and marvelous effects. On and on they moved, widening, growing as they passed, until the tourmaline-like surface was encompassed. Far across the lake we traced them; saw them climb the distant crimson cliffs, ever growing, deepening in an ecstasy of color, until they reached the very summit, and poured over the edge of the world to leave the silent waters a gleaming, pulsating sapphire of hazy light.



MORNING CATCH OF RAINBOW TROUT WITH FLY.

Pelican Bay, Upper Klamath Lake, Oregon.

I was told by expert fly-casters who have fished all the streams of the country, that this region and its surrounding rivers and streams represent the finest large rainbow-trout angling in the world, and I do not dispute it. I am not an expert fly-caster, only a lucky sea angler ashore; but if I should be asked to name the real attraction of Pelican and its little rivers, I should reply, not the big trout, which readily respond to the fly; not the splendid forest and its game; not the lakes and seas of azure which float in mighty craters literally in the air, but the passing of the day on lake and cliff; the racing sapphire shadows that every evening lured and held us on the crystal streams.

All of the little rivers which flow into the head of Upper Klamath rise in splendid springs of icy water and afford good fly fishing. One, Williamson, called by its devotees the most beautiful trout stream in the world, has many famous pools, as Spring Creek, Crystal Creek. Here one can cast from the bank or from a boat, and have as a boatman a genial native whose father was a Portuguese, his mother of Irish lineage. The good boatman married a Modoc squaw and has a large growing family whose strain should commend them to the traveling ethnologist. Not far away is Ana Cañon, of many charms; a knife-like abyss reaching away from the big crater, abounding in thick forests and clustering trees which overhung the winding musical trout stream, an enticing little river that lures one on and on, into its throbbing heart.

Anglers are not all alike, and there are some men conscientious on other subjects, who desire the limit every day. These sylvan streams are not for them; they would be disappointed; the waters appear to be designed for Waltonians, to whom the actual catch is but an incident in the day. I observed that many anglers here were quite content with the mere casting along the charming, indeed ideal, shores, when the fish were not rising, and were well satisfied to

bring in three or four trout ranging from two to four pounds as a result of several hours casting.

In a word, Pelican is no place for the angler who fishes for numbers alone, the species who is a menace to all the game of America, be it finned, winged or clawed. The trout here are the largest I have ever seen, all rainbows, ranging up to twenty or more pounds. I saw no very small ones, and scores ranging from seven to ten pounds. But they are like trout everywhere—notional and peculiar. For days when the water is smooth and clear, they will rarely rise to any fly, but when ripples play over the crystal pools, the living rainbow is eager for the lure.

The season here is from May to October 31st, and during these months some large fish have been taken. In 1898 a twenty-two and one-half pound rainbow was taken, with a spoon. During 1906 the largest fish was taken by Mr. Lippincott of Los Angeles. It weighed twenty-one pounds. Mr. Adams took a fifteen-pounder in 1905. All were taken with spoons. Famous fly catches are fourteen and one-half pounds, by J. D. Kendall, of Salt Lake; twelve and one-half pounds, by W. E. Elliott, of Los Angeles, in 1906; twelve and one-half pounds, by J. R. Wick, Ashland, Oregon; ten and three-quarter pounds, by A. L. Beebe, of Portland, in 1905; nine and a half pound trout, four-ounce rod, by Gifford Pinchot, and many more records which have not been kept. These catches point to the conclusion that here on the eastern summit of the Cascades is the true home of the big rainbow trout, and if a high standard of sport is maintained, and the lakes and streams intelligently stocked, the region will long remain a Mecca for expert devotees of the rod, reel and fly.

CHAPTER XV

THE TROUT OF THE GREAT FOREST



NE would hardly think that Santa Cruz with its mountains tumbling into the sea, its splendid red-woods, its many trout streams born in the shadow of giant trees, many of which sprang into life long before the Christian era, needed any special allurements to attract the angler, yet when I entered one of its inns one cool night in the spring long after midnight, almost the first object my eyes fell upon was a leaping trout, not a mere fingerling, but a lusty fellow of comely shape and fair proportions.

Observe the coincidence: a belated traveler intent on fishing, enters the inn; there are several, possibly a score or more, in Santa Cruz, so the late arrival might possibly be on a tour of inspection; he might take exception to something in his preregistering glance about the apartment; but at that moment the trout leaps, the boy seizes his rods, the die is cast, a man so fond of trout must know where they are to be had—a logical conclusion, and so the traveler becomes an inmate of the Steelhead Inn. This is not the name over the door, but it might well be, as in the office, confined in a roomy tank, were twenty or thirty of the most interesting steelhead salmon trout it was ever an angler's good fortune to see.

Once in walking through a Canadian town, I came upon a little hotel, so strange, at least to me, that I stopped and looked at it long and earnestly. It was flush with the street, of an ancient design, and reached by an arched doorway which led far into its inner depths, which reeked with

mystery. Finally I went in, found the proprietor, and passing the amenities, addressed him:

"Landlord, this house is haunted, is it not?"

I was sure of it, but to my surprise, he resented the imputation hotly, while I held my ground, and I believe to this day that had I the time, I could have discovered some dark and secret deed associated with the strange inn, and shown it to be haunted. But the point is, that some landlords are particularly and unduly sensitive, as when I asked the Steel-head host if these trout were trained to leap as guests came in, and were trying to decide whether to stay, he resented it and said the fish were tame and his pets. To prove it, he introduced me to them, as it were, handed me some meat which I held over the tank; the trout sprang out of the water, and took it from my hand, then crowded about the front of the tank and eyed me in friendly fashion. The innkeeper then asked me to indicate a fish to be taken out. I picked out a large fellow, whereupon, thrusting his arm into the tank the fish submitted and allowed him to take it out of the water, and more, reclined in his palm without a struggle; indeed this trout lover, for such he was, said the fish rather liked it, and when he replaced it, the trout rubbed against his fingers, and any fish in the tank would submit to this handling, displaying to me, at least, a remarkable docility.

The secret was, that the owner had raised them from the eggs, which had mostly been taken from the little streams that came down the deep cañons of the Santa Cruz range. Every time I passed through the office these trout crowded to the glass, faced me in long silvery green and spotted lines, and begged for something more substantial than flies for which they leaped and snapped with avidity.

I was soon in the heart of the great redwood forests which form the environment for some of the most beautiful trout streams in California. The Santa Cruz mountains are a spur of the Coast Range which reaches

out into the sea, forming the northern boundary of the bay of Monterey. They are not very high, but are deeply wooded with splendid forests of sequoia (*sempervirens*) which a century ago covered every hill, dale and cañon, and which to-day present one of the most inspiring pictures of tree growth in the world. Cousins of the great sequoias of the Mariposa region in the Sierra Nevada, they rise to sublime heights, and assume proportions that place them among the wonders of the land. The range is cut, pierced, furrowed by deep cañons which are the beds of little rivers like the San Lorenzo, the Soquel and others; mimic cañons of the Colorado cutting knife-like down through the rocks of ages, until the walls rise hundreds of feet from the stream or slope down with gentle incline, the sides and summits dark with giant trees, rich with forests of fern and brake, a natural park through which I was carried to the upper range, as I proposed to fish the San Lorenzo down stream and follow the gulch or cañon to the sea. There are few more accessible places in America than this great forest, penetrated by a narrow-gage railroad which skirts impassable cañons, crosses minor ones; shelves built one thousand feet up, like the paths of the cliff dwellers, carrying you up until you look down on the giant trees. Again there is a mountain road, smooth and well watered, up to the summit; or, you can walk up the San Lorenzo and creep into the very heart of the cañon.

I compromised by trying it all ways, and found each had peculiar charms of its own. On the fishing trip we climbed the range by carriage, going slowly, that we might enter into the full enjoyment of it all; and if you do not know the San Lorenzo, imagine a great black forest so far as shadows are concerned, a deep splendid green from the leaves of countless redwoods, tall, graceful spires, covering every foot and acre, and spread over a region as large as some States; now clinging to the side, now in deep cañons, about you, below and far away, where the green forest

seems to flow into other ranges and eternally on. From the Pacific it is all green, a cloak always green, *sempervirens*, but as we creep along the edge, we come to little lagunas protected from the sea by a sand dune, one or more, or upon splendid titan-like rocks which breast the sea with bold front tossing it high in air, opening in great caves to engulf it, and very near is another laguna perhaps connected with the ocean at high tide. If you are very observing you may see salmon trout, grilse if you will, coming through the impossible entrance, one-, two-, perhaps three-pounders, and many more not so large, which assimilate the color of the bottom so deftly that you can hardly see them. If you happened here in the dead of winter, when California is a flower garden, you might see ten- or even twenty-pounders slowly swimming up stream.

The laguna is the sea door of the San Lorenzo, the Soquel, at Capitola, and others, and is large or small according to season. Sometimes after a heavy rain it is a real lake; again the sea washes away the sand, scatters it and rushes in to mingle with the fresh waters that are pouring down from the mountains. We cross a little stream and begin the climb on a shelf of a road which seems hung on the side of San Lorenzo Cañon. It would seem impossible that so small a stream, even if it does roar at times in winter, could have cut so tremendous a chasm just to afford a home for trout, and to provide good fishing for you and for me. Very soon you are in the redwoods which grow higher and higher, more serious, demanding more attention as you rise. Here the road is hung to the cañon, and you look down upon the top of giant trees perhaps a thousand feet below and obtain a new idea of redwoods. Now you come out into the sunlight again, drop into the deep shadows of redwoods, giants as old as Rome, older than the pyramids perhaps, trees that were in their old age when Columbus came. Then the road enters a little portrero or meadow and we see a village, the houses hidden away among the trees and sur-

rounded by mountains, a highland hamlet, a charmed spot, and you wonder that you never heard of it before, and a strong desire comes over you to tell the old driver to stop, as you have concluded to remain here forever; but a mile or two further on, another little town appears, thirty or forty homes, houses made of redwood logs, rustic and charming, and beneath the broad veranda of one runs a clear mountain stream, leaping on to join the San Lorenzo, which is now not far away. Again you dip into the trees, and out upon the narrow trail, or road, around big horse-shoe curves, where the incense of laurel or bay, redwood and countless herbs fills the air, and the chatter of bluejays tells the story of forests, dark and dense. Then you suddenly round a curve and see the sheer drop into the cañon, and on its sides madroño trees, their naked trunks with tints of burgundy, and far below, lines of Lombardy poplars and eucalyptus trees. The musical rush of waters comes softly, growing louder and louder. Surely if you catch no fish, if the trout pass you by, you are more than repaid for the climb into the cañon of the San Lorenzo.

"I reckon you can reach the river through that brush, mister," said the driver, pulling up, as a big ten-in-hand of oxen and bulls came along hauling two teams of shacks, the bulls bearing bells, which chimed in a melodious fashion, and could be heard a long distance down or up the cañon. So, following the sound of rushing waters, I made my way down to the little river born of the big trees and still cutting its way down into the rocky heart of the Santa Cruz range.

The cañons of the Southern Sierras are fairly open, but this little stream seemed very much shut in by contrast; a deep cut with a turquoise top, across which vagrant fog flecks were running; sides of emerald, and deep tints of green, waters of silver with shades of amber, where vagrant sunbeams flashed in, music of waters and clanging leaves; surely this was a field for an artist, not a mere angler whose love for color found its expression in a book of flies.

Indeed the San Lorenzo is a hard river to fish; one is more than apt to forget fishing and look at the scenery; but the lure is tied on with that magic knot where the eyed-hooks are used, a diminutive Royal Coachman made for dark nooks and corners of redwood forests. A look behind to navigate the line, a bend of the wrist and the fly drops languidly down into the long musical ripple among the amber shadows, back and down again a foot or two, then over into a little snug harbor where a vagrant sycamore leaf has dropped and is sailing away, back, and then, a silver band catches a brilliant sunbeam, the reel sings an answering note to the brassy throated bluejay that is following you down stream, and as you instinctively strike, up into the air dashes your trout, a glorious fellow built for these chambered halls, these alcoves of green. Down the stream he goes, gathering in your line, a master of resources, making perhaps for some deeper pool. He carries you around a turn, where a new vista spreads away, a little series of mountain lakes, held by the cañon, and here in the open, the trout makes its fight, hammering on your line like a salmon with the wonderful strength of a grilse, and its sea-born vigor; leaps to show you its beauties and to lure you by its charms to some open stretch, circles the pool, comes in on you faster than the line can be reeled, then up into the air in a splendid leap he goes and deftly flips the fly from his mouth, and sends it whirling at you; or did some Lorelei of the deep pool, or some naiad of the wind, play the trick?

Beyond the next turn in a deep and dark pool I lured a fish which went into the air so quickly that I was sure it was a rainbow, but the glint of the sun on its silver sides told the story of another steelhead fresh from the sea, a fall runner full of life, a ground and lofty tumbler which went head over tail into the air, three pounds of animated silver that lunged, rushed, tumbled, laid broadside on and played so many tricks with the four-ounce rod that I could not but believe that it would escape.

You may know the trout at its best, the sudden rush, the extraordinary power for so small a fish, the exuberant fancy of the game, as it leaps high into the air, seemingly striking at the line with its tail. A reliable angler assured me that he had seen one five feet above the water, and you will agree with me that compared to it, the rainbow is a laggard and the brown cut-throat or even brook trout a gay deceiver. I gained ten feet to lose twenty, and having a very delicate tapered line and a long slender leader, I played it gently, and so was taken down the stream over little rapids, around bends, and almost lost it a dozen times before I came to serious work, and began to reel.

How it laid back and hammered on the line, and tested my tackle a score of times, are facts engraved on my memory as I slowly brought it to the net; yet I almost lost it, as when it saw the corded menace creeping toward it, that mysterious something without body, or soul, or shape, which every one knows but does not understand, that specter which alarms and puts good luck to flight, the "second wind," took shape and the fish was away again seemingly all its vigor unimpaired, making a gallant rush that nearly carried it out upon a little beach of shining sand; then back it came into deep water, and when I dropped the net and rounded it up, into the air it sprang again, to fall and surge, fight and hammer at the bending rod

"Till floating broad upon his breathless side,
And to his fate abandoned, to the shore
You gayly drag your unresisting prize."

Which was what I did, reeling it carefully; then, my net at the bottom, I slowly dragged in until I reached the shallows, then brought it struggling up the sands.

I lost another large fish near here, which I laid to a split leader, and after fishing down the stream a mile or more, with varying luck, climbed the bank to pass the noon under the trees while all self-respecting trout in the San Lorenzo were taking a siesta,

Curiously enough, the wind was in the east, as offshore, at least in summer or before October, the waters are clear and calm, and instead of a climatic siesta at noon, the wind rises, blows heavily for several hours, generally bringing in the fog—the friend of the redwoods, which range from here north into Washington and far along shore.

Anglers have various superstitions regarding the wind, and most of them can be traced through the anglers of old—Du Bartas, Dennys and others—to the classical myths; anglers who doubtless visited the Temple of Aeolus, which had upon its hexagonal sides flying figures of winds. Eurus was the east wind, even to-day in bad repute, and was shown as a “young man flying with great impetuosity.” Auster was the southwest wind, an old man of gloomy visage, “a head covered with clouds, a sable vesture and dusky winds.” He can be counted on to-day in California at least to ruin the fishing, and send with his sou’wester the same to the four winds of Heaven. All sudden and heavy showers the ancient angler laid at the door of Auster. A mild and gentle wind, the kind which ripples the pools of San Lorenzo, coming through the big redwoods with gentle touch, is from Zephyrus.

“Soft is the strain when zephyr gently blows,
And the smooth stream in smoother numbers flows.”

It was Zephyrus who wedded Flora and visited all lands, according to the old Athenian belief.

Surely they tarried on the San Lorenzo, where flowers and gentle winds are found. In December when storms come rolling in, the dark forests are beaten and bent. Caurus, the northwest wind, is the cause.

Zephyrus in California is somewhat chilled by contact with the cold Japan current. Of Aquilo, Boreas, the San Lorenzo knows but little. It is rather Caurus, the northwest wind, that brings in the impenetrable fogs to the Santa Cruz mountains, and holds them in everlasting greenness. Boreas

is forced to keep out of California, retiring to his fastnesses in the northern mountains, from which he occasionally ventures forth to ravage less favored lands.

All these gods of wind had a firm hold on the fancy of the angler of old and they have meaning to the angler of to-day, and by the angler I mean the fly fisherman, the imaginative, impractical dreamer (for the day at least) who haunts the streams, brooks and lakes of all fair countries.

The slopes of this deep cañon seem especially designed for a midday angling siesta, but in lieu of this I climbed the grade among gigantic redwoods, where I could see fifty trees from thirty to sixty feet in circumference, and from two to three hundred and fifty feet in height. Atlas-like, they seemed to support the sky, stupendous creations, monuments to the duration of time and the passing ages.

It is a sacrilege to talk of economics in such a connection, but after lying down and looking up at one of these trees one can realize the meaning of the statement that it is 300 feet high and represents 200,000 feet of timber. Men knew this, as some piratical land grabber, the last of his race, let us hope, was ready to reduce these trees to timber, when they were rescued, and now nearly all the big trees belong to the government or state. But the largest of all these big tree groves, and the one with most picturesque associations, that of Calaveras, is still the property of the lumberman. It is a gratification to know that to an angler, a very good one, too, either at sea or ashore, Gifford Pinchot, chief forester, Americans are indebted to a large measure for the preservation of our forests all over the land.

There is a mysterious silence in the grove save for the bluejays, which appear indigenous; yet at times a sweet gentle sound is heard, the cadence of upper currents playing in the summits of the great trees. So closely are they packed, so perfect the coverings, that when it rains, an hour often elapses before one perceives it beneath them. The ground beneath them is soft and of sweet-scented things; great

patches of oxalis with their clover-like leaves and white flowers bar the way, covering the ground, creeping things that never saw the sun in these abodes of silences.

It is gratifying to think that this group of trees beneath which the weary angler of the San Lorenzo may lie and take his siesta, one of the wonders of the world, virtually belongs to the people. "Sempervirens Park," including about four thousand acres, has been bought by the State of California, and will be preserved for all time with the many interesting followers of redwood forests—the wax myrtle, California nutmeg tree, the oxalis referred to, the Clintonia and California whortleberry. One cannot contemplate a tree fifty or sixty feet in circumference and two hundred to three hundred feet in height without being impressed that he is in the presence of some extraordinary manifestation of nature.

How long the trees have been growing is not known; three or four hundred years is given as their age by some authorities, but as new shoots rise from the old shrubs there is little doubt that some pierced the sky here long before the Christian era. We have no ancient castles, but the sequoias along this little trout stream, the mighty columns whose shadows shelter trout in the San Lorenzo, were old when Germany was a wilderness.

When the sun dropped in the west and shadows began to fall on the river I left the dark forest, and finding a trail, dropped down the face of the cañon to the river again. The skyline here was sequoia, uneven and beautiful, bringing out a peculiarity of the trees, their variation in shape and form. Few trout streams have so many distractions as the limpid San Lorenzo, which I again reached by forcing my way through a maze of alders, fragrant bays and willows, to find a series of little cascades, inviting to the fly-caster and suggestive of hidden game. This is not the dream of a fisherman, but merely a recital of things which appeal to some idle and very imaginative and doubtless impractical people,

who see joys in rocky and unpassable streams, down which, well booted, they prefer to slide, stumble and sometimes roll and swim; exploits altogether arboreal, aerial, language-producing exploits, which need not be dwelt upon. The San Lorenzo was a paradise of its kind—there was no question as to that—but when the stream narrowed down and took the shape of the letter S it was different. In just such places the trout congregate to laugh at the angler, to lie in cool riffles, head up stream, and watch the fly-caster *in extremis*, as he assays trees in wading boots; but a veil may be drawn over the sadness of this feature of angling, and a picture of an angler with his fly, with a record in five counties, thirty feet up a tree, wiped from the slate of memory.

Wading slowly, I came to a long reach of water. The great trees cast dark shadows all about, and upon one side rose abruptly for several hundred feet, while on the other a little beach came tumbling down to the water. I gradually increased the length of my casts, a part of angling, “getting out line,” which has its peculiar fascinations, and by mere chance or good luck dropped the bunch of impossible feathers lightly, just in a little riffle where the cool water was flowing musically down over polished pebbles.

A gleam of silvery foam appeared and the resilient split bamboo shot the message to the reel that blazoned an alarm and sent a thrill up the rod handle telling the story of a strike; a very simple, foolish thing to the layman, yet something to upset the dignity of the most reverend seignor, something which places a five-year-old schoolboy on terms of equality with the President of the Board of Education, perhaps the most awful figure in his range of vision.

I had a strike in the best of places and held my fish for a moment in the very joy of conquest, literally forced him up into the air, where I could see him gleam against the green bay leaves, and could catch the musical splash of his return, held firmly by an impossible glass-like cord woven by a silkworm, a thing he could break if I made the slightest mis-

take, and then to the buzz of the little reel, stze-stze-ste-e-e-e-e, away he went with the delicate line, making the welkin ring. I followed on and on, giving and taking, now wading around a point of rocks, or out upon the little beach, back again into the pool to see him jump and go blazing across the water, sending little waves of spray into the air.

Sometimes he had me on the run, and bore away—a resistless force on the light tackle—and I could see him, side against me, hammering on the line, as the fitful beams of light came through the interstices of the forest. By dint of hard coaxing, I gradually brought the fish in, held the net out of sight that it might not alarm him, and then when finally beaten, but not conquered, I made sure of him. Walton says of angling as did Dr. Boteler of strawberries: “ ‘Doubtless God could have made a better berry, but doubtless God never did.’ And so, if I might be judge, God never did make a more calm, good, innocent recreation than angling,” and I might add, a better, a harder-fighting fish than this. He looked five pounds but I did not weigh him; I gave him and myself the benefit of the doubt.

The deepening shadows of the afternoon, the wind that caught the little stream at various angles and made ripples everywhere, brought the climax of this fishing day. Guileless of any thought of butchery, I might have become a very Volscian in Coroli, as every drop of the fly was followed by a strike, and I repeatedly jerked my lure from fingerlings and offered it to their betters; and so, working slowly down from pool to pool, filled my creel, not to the legal, but to the conscience limit.

I would not create the impression that the angler is always so favored in the San Lorenzo or Soquel. I never failed to take a reasonable catch in either stream, but the fish do not always run large. So beautiful and accessible a trout region is the Mecca of scores of anglers, and no streams are more assiduously fished than these. They are

not only restocked annually by the State of California, but the country maintains a fine hatchery at Brookdale, and when the season opens in May the sport is at the best. The habitués of the streams catch the hard-fighting steel-heads, and it was my good fortune to see them in many places. I found a small school of possibly three-pounders lying beneath the shelter of a bunch of seaweed offshore at Capitola, and in September I stood on the sands at this attractive hamlet where the Soquel has broken down the cliffs and made a little laguna, and saw them entering the stream from the sea, collecting for the long run up stream, then I found the Soquel under the shadow of the redwoods five or more miles up from the laguna, and fished it up and down, even in the pools of its branches which rose in the very heart of the Santa Cruz range.

This little stream is not so large as the San Lorenzo; it has cut no deep cañon to compare to the former, yet it has many delights and charms. The San Lorenzo seeks the deep and dark nooks and corners, lies in a deep cañon, while the Soquel is more often in the open sunlight, though it does not entirely lack abysmal gorges in its upper reaches, but the portions most to my fancy were the open reaches where it seemed to flow through little meadows, yet was always in a cañon far below the road. To the west the hills and mountains had been denuded, but to the east the redwood forest rose and formed the graceful sky line and covered the face of the steep, precipitous cliff with a solid mass of trees which cast green, purple and amber shadows, ran beneath tree trunks to sweep out into wide stretches and tip over rocky moraines in silvery flocculent masses, affording shelter everywhere to trout of some size, degree or station. I fished in all these pools, and the little stream had a marvelous faculty of taking one by and into little hamlets, and through ranches where one could see that marvel of California, oranges and apples growing in the same dooryard; redwood and Arctic spruce, banana and rubber tree, cheek by

jowl with cherry and plum; a fruit lover's paradise was this trout stream running through some of the finest orchards in California, where ranches had trees centuries old. In fishing one wades down through ranches and farms, through the town of Soquel, then to Capitola by the sea, where, from the fine beach, the bay of Monterey, and the finest salmon fishing on the coast reaches away for fifty miles.

The steelheads, which found a place in my creel, were attractive in appearance on the line, or served after the fashion of the mistress of the little inn, not two minutes from a trout pool of the Soquel. They told me on the ranch that, in the old days, twenty-pounders were not unknown in the mouths of many streams from the Santa Inez to the Russian River. In many of these streams, this fish rises to the fly under some new name, as in the Fraser it is the stit-tse, and in the splendid reaches of other streams of the range, the kamloops. Indeed, the keen discernment of a magician is required to distinguish the steelhead from the rainbow, which replaces it throughout the interior of California.

The fishes which enter the little lagoons at the mouths of these Southern California rivers, linger in them until the rains of the fall or winter begin to fill them. Perhaps they have learned this in Southern California, where, before the rains, the San Gabriel ends after six or eight miles, in sand, the river running along beneath the surface; but after the rain, a wide and often turbulent stream reaches far back into the cañons of the Sierra Madre, and up this the steelhead goes to spawn, then returning to the sea.

In April or March, the rivers being protected during this time, the fry of these fishes, often of several seasons, remain in the pools and reaches of the river, lying in the shallowest riffles, until they are fingerlings, when they go down stream, and lie in the lagunas, or the salty waters at the mouths of the rivers, going up stream with the run of adult fish in the fall, and in the following spring going to

sea, from which they doubtless return in the fall as adults. In nearly all the streams, particularly those of central and northern California, there are two runs: those fish which enter the streams in September and October ranging from one to three or four pounds. My catches in the Oregon streams in October, one hundred miles from the sea, and among big salmon, were three- and four-pounders and hard fighters; but in midwinter (it should be remembered that winter here is like an eastern October) another "run" begins of larger fish; eight, even twenty pounders, have been claimed by enthusiastic anglers. Those fishes called silver-sides, by some fishermen, big and fresh from the sea, have a splendid luster, in sharp contrast to the smaller trout of the fall run, whose gleaming sides have been dimmed by their stay in fresh water.

CHAPTER XVI

THE TROUT OF THE GREAT WEST



It is now just a hundred years ago that Meriwether Lewis and William Clark, encouraged by Thomas Jefferson, the Theodore Roosevelt of those early days, crossed the great divide, and explored the waters which we now call Columbia.

It was in the headwaters of the Columbia that these explorers first met with the true trout in America. William Clark, who was a judge of fine fishes, found it good, and thirty years later, when Sir John Richardson published his noble work on the animals of the North, "*Fauna-Boreali-Americana*," he named this Columbia River trout *Salmo clarkii*.

His specimens came from Astoria, where they were collected by the enthusiastic surgeon-naturalist, Dr. Gairdner, then an employee of the great fur company, a man worthy of remembrance in the annals of the good men who knew fish.

The word trout is of French origin, *truite* in modern French, and still earlier from the late Latin word *trutta*, which becomes *trucha* in Spanish-speaking countries. In Europe, the name trout in all its forms is used for black-spotted fishes only, those with red spots, as we shall see later, being called by other names.

All the true trout have come to America from Asia, and none have naturally crossed the great plains. For in the Great Lake region, the Alleghanies and the valley proper of the Mississippi, the true trout are unknown.

But in northern Europe, Siberia, southern Alaska, and

throughout the Rocky Mountain region, and the waters to the westward, trout are everywhere. Their original parentage, no doubt, was from some sort of a land-locked salmon; their original birthplace perhaps not a thousand miles from the Baltic Sea. Since that time of their birthday, very long ago, trout have traveled up and down the rivers, down into the sea and up another river, until they have reached from Scotland to Chihuahua, from Montana to the Pyrenees, and whoever seeks them honestly anywhere in all this range shall find exceeding great reward. Whether he catches trout or not, it does not matter; he will be a better man for the breath of the forests and the wash of the mountain streams in which the trout makes its home.

Most primitive of the American species, no doubt, is the one named for William Clark, *Salmo clarkii*. It was born in Alaska, and has worked its way southward as far as Eel River in California, eastward across the divide into Montana; no great task, for on the swampy flat of Two Ocean Pass, the headstreams of the Yellowstone interlock with those of the Snake. It runs southward throughout the great basin of Utah, once tributary to the Snake, and more or less changed, its descendants have peopled the Platte, the Arkasas, the Rio Grande and the Colorado.

The Clark trout is usually known as the cut-throat trout, from the half-hidden gash of deep scarlet which is always found just below the base of the lower jaw. This gash of red is the sign manual of the Sioux Indian, the cut-throat among the fierce aborigines.

This is the best mark of the cut-throat trout, though it disappears in alcohol, and it is sometimes faintly shown in other trout, especially in the large rainbow trout of the Shasta region. Other marks are the rather long head, which forms nearly a fourth of the length of the body from the snout to the base of the caudal fin. Almost always there is a narrow line of very slender teeth along the middle line

of the base of the tongue, besides the larger teeth which surround the edge of the tongue in all trout. The body is usually well spotted, and the spots are small, there being none on the belly. But no one can know a trout by its spots, because the spots vary interminably. They depend mostly on the character of the water. In the lakes they grow faint, and in the sea they vanish altogether, giving place to a uniform silvery sheen. This is true of all trout alike, American, Asiatic and European.

The color of the flesh varies equally. It seems to depend partly on age, partly on the food. A diet of shrimps turns the flesh red, it is said, but the statement needs proving.* No one really knows why trout flesh varies in color. The size of trout varies as much as the color. A species which is mature, and spawns at six inches in the mountain brooks, may reach a weight of ten or even twenty pounds when taken in the sea. Whatever food the fishes can get, they will turn into trout, and the trout which cannot get much are just as perfect as the others.

The best mark of the cut-throat trout is found in the small scales. In a row from head to tail you will count from one hundred and fifty to one hundred and eighty.

The cut-throat trout spawns in the spring. Those in the streams run up the smaller brooks while those in the sea or the lakes seek shallower waters, either a stream or a sandbar in the lake. No trout ever spawns in the sea. The cut-throat trout is hardy and vigorous, but its degree of energy depends on the character of the streams. A trout in warm water anywhere usually shows little fight. In the lakes, the cut-throat rises to the spoon or the phantom minnow. In the brooks, a fly, a grasshopper, or a bunch of salmon eggs will usually engage its attention, and the swifter the stream the harder it fights. This species is the most widely distributed of the trout. It is one of the handsomest

* The junior author found rainbows in Klamath Lake and Feather River, some white, some red, in the same pool.

and finest, yet it has rarely been transplanted to waters other than those to which it is native.

The true cut-throat is found in the coastwise streams from Kadiak to Eel River, and its greatest abundance is in the Columbia. It is also unchanged in the upper waters of the Missouri, for there is a clean runway from the Snake River in Idaho, through Pacific Creek and Atlantic Creek in Two Ocean Pass above Yellowstone River and the Upper Missouri. It has one variant in the State of Washington, the Waha Lake trout, *Salmo bouvieri*. In this mountain lake without outlet, Bender and Bouvier found this peculiar form, with spots on its posterior parts only, and the head shorter than in the true cut-throat. Near to the true cut-throat is the trout of Utah Lake, and the Great Basin of Utah, *Salmo virginalis*. This form is profusely speckled, the spots small and mainly on the back, just as numerous anteriorly as on the tail. The scales are rather larger than in the true cut-throat.

In the Platte and Arkansas Basins is the green-back trout, *Salmo stomias*, a bright-colored form, with large black spots mainly gathered on the tail, and with small scales. It is one of the smaller kinds of trout, but abundant and game.

In the Twin Lakes near Leadville, the large and handsome yellowfin trout, *Salmo macdonaldi*, is found, in company with the other. This species has small scales, small black spots, mostly on the posterior region, and the sides and lower fins are bright lemon-yellow. The only specimens of this trout known were taken in the summer of 1888 by George R. Fisher and Dr. Jordan. Mr. Fisher, one of the most skilful of anglers, insisted on the existence of the species and on the fact that he could catch it. He took the present writer on a long row, before breakfast, in the very early morning, and all the fish that were caught rose to his fly from the deep water of the lower lake. The largest of these weighed nine pounds and was perhaps the most beautiful of all the trout. The species was described in

1889, and named for the head of the Fish Commission, Colonel Marshall MacDonald. Since that time several attempts have been made to recover the species, but Mr. Fisher has removed from Denver to Seattle, I believe, and his splendid fish rises to no other fly. The green-back trout is common enough in the same lake.

In the Rio Grande is still another cut-throat trout of the general type of the green-back. This is *Salmo spilurus*. It is extremely abundant in San Luis Park and about Wagon Wheel Gap, and in the brooks of the Sangre de Cristo Mountains. It ranges far southward into the mountain brooks of Chihuahua.

Very close to the Rio Grande trout is the trout of the Colorado, *Salmo pleuriticus*, a kind which, like the others of the Rocky Mountain region, has its spots mostly bunched on the posterior part of the body. The scales are smaller than in the others, and the lower fins are rather orange than red. Another of the most direct descendants of the cut-throat trout is the Tahoe trout, *Salmo henshawii*, which is confined to the streams and lakes of the desert of Nevada, the basin of the former Lake Lahontan.

It is found in Lake Tahoe, where it was discovered by Dr. Henry W. Henshaw, in 1877, and named by Gill and Jordan in 1878. It descends in the Truckee to Pyramid Lake, whence it comes in large numbers to the markets of San Francisco. It is found also in Donner, Webber and Independence Lakes. It is found also in the Carson and the Humboldt—both once tributaries of the vanished glacial lake called Lahontan. From the Truckee it has been introduced into the Feather, the Stanislaus and the Mokelumne, on the western slope of the Sierras.

The Tahoe trout is plainly a cut-throat, having the same red dashes under the throat, the same long head, small scales and teeth on the base of the tongue. It is, however, browner or yellower in color, and the spots are always larger, covering the belly as well as the back of the fish.

The Tahoe trout usually weighs, when mature, two or three pounds, but in the depths of Lake Tahoe huge specimens weighing from seven to twenty-eight pounds have been sometimes taken. Those large trout, called the silver trout of Lake Tahoe (*Salmo tahoensis*), are supposed to spawn in the lake, and thus to form a sub-species more or less distinct from those which spawn in the brooks. As a food or as a game fish, the Tahoe trout is scarcely different from the ordinary cut-throat of the Columbia.

Of the many long-headed trout more or less allied to *Salmo clarkii*, two are especially interesting to the angler—the Crescent trout and the Beardslee trout. Both are found only in the deep glacial lake in Clallam County, Washington, known as Crescent Lake. The Crescent trout is a fine game fish, reaching a weight of eight to ten pounds. It is very deep steel-blue in color, with fine specks and without red at the throat. The scales are as small as those of the steelhead, but the head is not short. In Crescent Lake, Admiral Beardslee also discovered the Beardslee trout, to which his name has been given. It is found in deeper water than the Crescent trout, and it is larger, some specimens weighing from ten to fourteen pounds. Its color is deep blue, dotted with small black spots. The scales are as large as in the rainbow trout, about one hundred and thirty in a lengthwise series, and the head is long, making more than one-fourth the total length to the base of the caudal. This is one of the finest trout known in any country, and it should be planted in other deep lakes before it is exterminated by the trout-hog, who is already encamped on the shores of Lake Crescent.

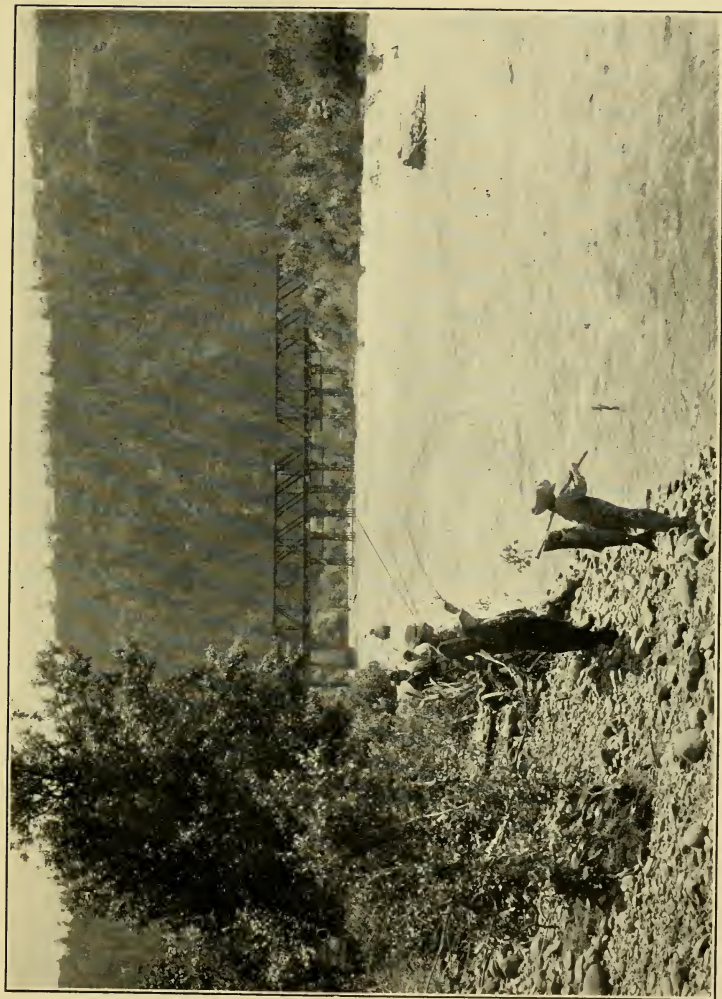
Another trout has been described from Lake Crescent as *Salmo bathæceter* (Meek). It is certainly much like the Crescent trout, of which it would seem to be a deep-water variation. Near to Lake Crescent, but wholly separated from it, is another mountain lake called Lake Southerland. In this lake two other species or forms of trout are found,

the one called *Salmo jordani* being close to *Salmo clarkii*, the other, *Salmo declivifrons*, resembling *Salmo crescentis*. Doubtless other mountain lakes of the Olympic range will yield still other species of trout, isolated from the body of their kind, and at least on the road to becoming separate species of trout. The origin of each of the different species of trout is clearly to be traced to the condition of isolation.

In the coastwise streams from Skagway, in Alaska, to Santa Barbara, California, is found a fine large trout, known as the steelhead, its scientific name being *Salmo rivularis*. This name was given by Dr. W. O. Ayres to a specimen taken in the Sacramento River, at Martinez. The species was long known as *Salmo gairdneri*, but the specimen originally named by Dr. Richardson for Dr. Gairdner was a young blue-back salmon, and not a trout. The steelhead is sometimes called salmon trout, and this name is not inappropriate. The salmon trout of England is, however, merely a sea-run example of the European brook trout, or brown trout, *Salmo eriox*, a species which is also called in the books, *Salmo fario* and *Salmo trutta*.

From the other trout, the steelhead is best known by its short head, the length of the head along the side being contained four and one-half to five times in the length of the body from the tip of the snout to the base of the caudal fin. The scales in the steelhead are rather small, averaging about one hundred and fifty in a lengthwise series from head to tail. The dorsal fin is low, and it has usually but three or four rows of dark spots. There are no teeth on the base of the tongue, the usual series lying around the outer edge.

The steelhead trout does not go very far from the sea, except in the large rivers, its habits in this regard being more like the salmon than those usual among trout. The old fishes do not, however, die after spawning. When in salt water the steelhead is very silvery, but in fresh water the spots appear, and in the small streams it is almost as much spotted as the rainbow trout. It reaches a weight of



STEELHEAD TROUT ANGLERS.
Royal River, Oregon.

sixteen to twenty pounds. From the market point of view the steelhead is the most important of American trout, being, usually, the largest and one of those most easily reared artificially. It is a fine game fish, taking the hook freely and vigorously. The large trout of Fraser River, known as Stit-tse, or Kamloops trout (*Salmo kamloops*), is a magnified steelhead. It resides in the large lakes of Washington and British Columbia, especially the Kootenay and the Kamloops, never descending to the sea.

There has been much discussion as to whether the steelhead is a species really distinct from the rainbow trout, and on this question the writer has at different times held different opinions.

Very careful comparison of specimens leaves no doubt that the two are distinct. The steelhead usually is slenderer than the rainbow trout, less spotted, has less red on the side and reaches a larger size. But these distinctions are all deceptive. The best characteristic of all is the short head, shorter in proportion than in any other trout. The head, as in fishes generally, is proportionately shorter in the adult than in the young.

The dorsal fin of the steelhead is never, in my experience, as large or as much spotted as in the rainbow trout, or even as in the cut-throat trout. The scales are always larger than in the rainbow, and smaller than in the cut-throat. By these marks even young fish can usually be distinguished. The steelhead finds its center of distribution in the Columbia. The Kamchatka trout, *Salmo mykiss*, which we once wrongly supposed to be the same as the cut-throat trout, is more like the steelhead.

The trout par excellence of California, found in almost every permanent brook, is the one to which I gave, in 1878, the name of rainbow trout, this name being a translation of *Salmo iridia*, given it in 1854 by Dr. W. P. Gibbons, of Alameda. Gibbons wrote the name "iridia," and perhaps that form of the word ought to stand, but *irideus*, as it is

usually spelled, is better Latin. Gibbons' specimens came from San Leandro Creek, near Alameda.

The rainbow trout has larger scales than the others, usually one hundred and twenty-five to one hundred and thirty, in a lengthwise row. The dorsal fin is high, having usually seven to ten rows of black spots. The old males show a good deal of bright red along the side. There are no teeth on the middle line of the tongue. The head is larger than in any other of these trout, its length being contained from three and one-half to four times in the length of the body, measured along the side from the tip of the snout to the base of the caudal fin. There is usually no red behind the lower jaw, although in large fishes of the upper Sierras this shade sometimes appears. In little streams the rainbow is mature at six inches, but in larger streams, and in the estuaries, it reaches a weight of six to eight pounds, and in lakes, as Klamath, attains a maximum weight of about twenty-four pounds.

Brook specimens are usually most profusely spotted, but in the sea these spots are more or less obscured by a silvery sheen. In coastwise streams it runs up the streams in March to spawn, like a salmon, being able to leap over small waterfalls.

The rainbow, on the whole, is probably the gamest of the trout, taking a fly eagerly and responding also to the lure of a grasshopper or a salmon egg. The range of the rainbow trout extends southward to San Luis Rey River in Southern California. Across the Mexican line in Lower California, in the mountain called San Pedro Martir, is a dwarf variant rainbow called *Salmo nelsoni*, the southernmost and smallest of all trout. Perhaps even more than any other trout this species varies with its surroundings.

Another species of trout perhaps derived from the rainbow, perhaps far older, but at any rate very distinct, occurs on San Gorgonio Mountain in Southern California, where it has only lately been found by Professor Joseph Grinnell.

A little trout, plain colored, with very large black spots, and very small scales, like a cut-throat. It lives at a height of 7,500 feet, and is shut off from the lower rainbow trout of the lower Santa Ana River by a series of waterfalls. This species has been named *Salmo evermanni*. In Oregon and Washington there is a trout which is scarcely distinguishable from the rainbow trout. It reaches, however, so far as we know, only a small size. We have seen none weighing a pound. The mouth is smaller than any other of our trout, and the dorsal fin is less spotted than in the true rainbow.

This dainty and game little trout was first taken in the Cathlapootl River by General George B. McClellan. Dr. Suckley named it *Salmo masoni*. In the Kern, Kings, Merced and other rivers of the southern portion of the Sierra Nevada, the rainbow trout have much smaller scales than in the coastwise streams. About one hundred and sixty-five scales form lengthwise series. Unlike the true rainbow trout, this form, *Salmo gilberti*, named for its discoverer, Dr. Charles H. Gilbert, has always a white tip to the dorsal fin, and there is generally some orange under the lower jaw. In the lakes, as Kern Lake, this species reaches a weight of eight to ten pounds. In the mountain brooks it is very much smaller, but everywhere it is active, vigorous and game.

The most beautiful of all our trout is the dainty little fish of three distinct species called golden trout, found in three different streams on the flanks of Mount Whitney, the highest peak in the United States, and described in a following chapter.

All these species, the cut-throat trout, the steelhead trout and the rainbow trout, with their several allies and descendants, are true trout, belonging to the genus *Salmo*, and all of them are dwarfed representatives of the salmon of the Atlantic. All of them have silvery scales; all are black spotted; all have the anal fin short, with but ten, eleven or twelve developed rays. All are likely to run down into the

sea if they can, and into little streams to spawn, their eggs ripening in the spring or summer. There is not much difference between males and females. The old males have the jaws lengthened a little, but never hooked, as in the Pacific salmon. The same fish may spawn a number of times, while with the Pacific salmon, a fish spawns but once, dying in a week or so after casting the eggs or the milt.

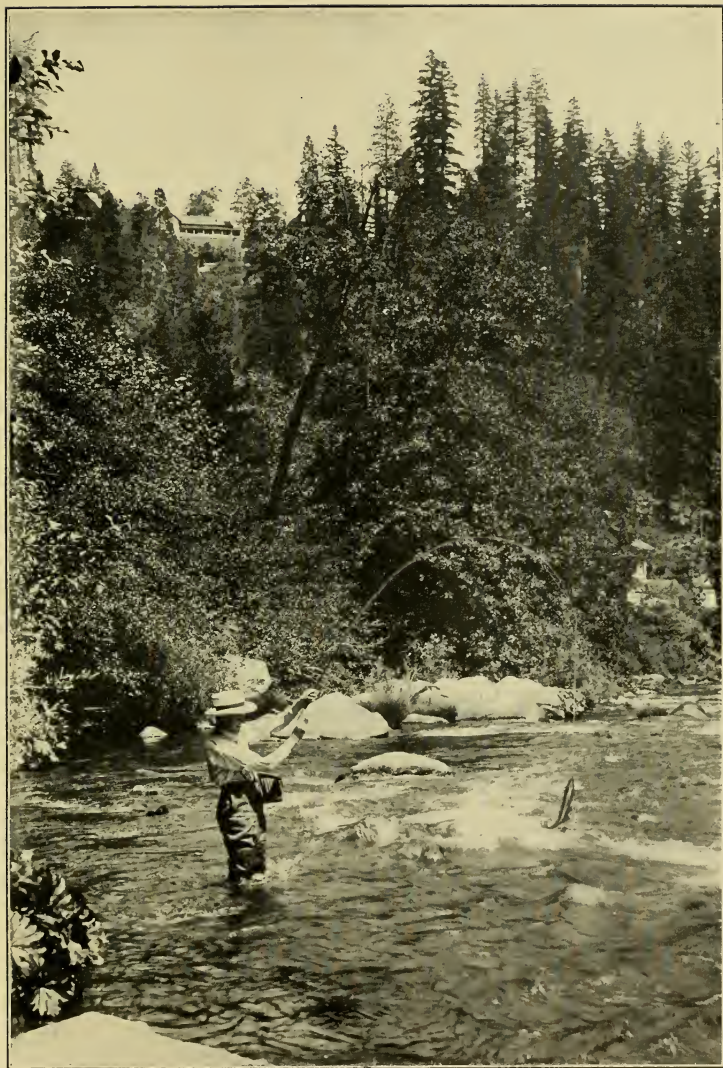
In Europe the name trout is given only to the black-spotted forms, which, together with the Atlantic salmon, *Salmo salar*, constitute the genus *Salmo*.

To the very fine-scaled, red-spotted forms of the cold streams and Alpine lakes, constituting the genus *Salvelinus*, the people of England have always given the name of char. The char of Europe, known in Germany as "Sailbling," or Sälbling, and in France as "ombre chevalier," is in science *Salvelinus alpinus*.

Closely related to this char of Europe are two or three species found in Canada and the Northeast. The Eastern "brook trout," or "speckled trout," the trout of our fathers and grandfathers, is a char, *Salvelinus fontinalis*. There is no higher praise to be given to any trout-like fish than to say that it is a char. In strict truth, there is no trout to be found in the United States or Canada, east of the great plains, except where the rainbow trout or the brown trout of Europe, or some other of their kind, has been planted.

The brook trout is found in all clear streams from Labrador to upper Georgia. It runs freely into the sea in Canada, losing its spots and becoming the sea trout of the lower St. Lawrence.

The Pacific slope has one char, the *malma*, or Dolly Varden, known in science as *Salvelinus malma*. In 1878, when the present writer first tried to classify these Western trout, a specimen of this *malma* was sent in from the Upper Soda Springs, on the Sacramento River, near the foot of Mount Shasta. The landlady at the Soda Springs said of it: "Why, that is a regular Dolly Varden!" So Professor



PLAYING A DOLLY VARDEN TROUT.

Upper Sacramento River, California.

Baird said to me: "Why not call it Dolly Varden trout?" And Dolly Varden trout it has remained to this day.

As it appears in the rivers, the Dolly Varden is one of the most beautiful of all trout. Dark steel-blue above, with round spots of crimson on its sides and over its back, while its fins are trimmed in front, as in chars generally, with crimson and white. The Dolly Varden is found in the McCloud and other tributaries of the Upper Sacramento. It is more plentiful in the Upper Columbia, always in cold, clear waters. It is still more abundant in all the shorewise streams of Alaska and across the Aleutian Islands to the coast of Kamchatka, and it is equally plentiful in northern Japan. From Puget Sound northward it runs down to the sea, where it loses its spots and becomes nearly plain silver-gray. In Alaska it is called salmon trout; in Washington, bull trout, but the name Dolly Varden can be used anywhere.

Its size depends on its food. It may weigh, when mature, anywhere from six ounces to twelve pounds. The little ones are brightest in color. In the little brook which falls into Captain's Harbor at Unalaska, are multitudes of bright little Dolly Vardens, mature at six inches. In the harbor below the falls are plenty of sea-run fishes of the same sort, weighing ten pounds. In Kadiak the Dolly Varden is caught in the seine by the ton and thrown away by the salmon fishermen.

The Dolly Varden is much more voracious than the true trout. In the Alaska streams they devour millions of salmon eggs, as well as young salmon. It is the greatest enemy the salmon breeder finds. All trout feed on young salmon, but this one is worst of all. It is gamy and vigorous, takes the hook freely, with a fly, an insect, a salmon egg or a scarlet petal from some mountain flower.

It is a good food fish. All trout are that; some perhaps better, but I cannot see much choice. In Kamchatka the Dolly Varden is baked in pies, "deep pies," like those sold

in English eating houses, and in that form they are surely good. To the trout-hog the Dolly Varden can be strongly commended, for it swarms in millions in every Alaska stream (the Yukon and its tributaries excepted). It will take the hook cheerfully, even dutifully. I once saw two Dolly Vardens caught with a pin-hook, which a little girl let down through a knot hole into the gutter on a street in Skagway. And of the thousands, there is not one that would ever be missed, for each one which is killed saves the life of a dozen salmon.

The trout of the Yukon is the Mackinaw, or Great Lake trout, *Cristivomer namaycush*, another kind of char, which reaches a great size, forty or fifty pounds or more, and is known by its cream-colored spots. These are never red as in the true char. This char is found also in various lakes of British Columbia and the eastern United States, from New York to Labrador, but it does not enter the United States to the westward of Lake Superior and Lake Michigan. It is an excellent food fish, but not valued highly by anglers, as it has a deep boring habit and has a sullen dislike to being hooked. In Lake Superior, where the lake trout is very fat, it is known as the Siscowet. We find no real difference, however, between the Siscowet and the ordinary lake trout.

The char of Europe (*Salvelinus alpinus*), called Saibling or ombre chevalier, is a dainty fish of the mountain streams and lakes, its size and appearance varying much with the water in which it lives. It has small red spots, and its belly and lower fins are usually orange. Very close to it is the Sunapee trout, *Salvelinus aureolus*, of certain lakes in New Hampshire. It may be even the same fish, introduced by some one from Europe. Several other forms, scarcely separable from the char of Europe, occur in Labrador and eastern Canada.

A more distinct form is the Oquassa or blue-back trout of the Rangeley Lakes, *Salvelinus oquassa*, a small slender

trout very blue, with crimson spots on the side of the body only. This again has notable forms or varieties, the most distinct being the Lac de Marbre trout, *Salvelinus marstoni*.

The brown trout of England and of Europe, *Salmo erioxo* or *Salmo fario* or *Salmo trutta*, the trout of Izaak Walton, is also widely introduced in American waters. It varies much with different waters, the Lock Leven trout, *Salmo levenensis*, being only a pale lake variety of the same fish, losing its supposed characters when bred in brooks. In all its forms, the European trout may be known by having scarlet spots, round or horseshoe-shaped, on its sides, mixed up with the black ones.

The species is nearest related to the rainbow trout, among the American species, but he is not much of an angler who cannot tell the difference.

But with all the rest we may commend it to the true angler. And the true angler is not the one who loves to fish, or who catches fish, or catches many fish, or many large fish. The true angler is one who loves fish well enough to know one kind from another.

CHAPTER XVII

THE SALMON



THE name salmon is given in England and all Eastern States to a large trout-like fish which lives in the sea, chiefly about the mouths of rivers, and which enters the streams to spawn, running for a considerable distance up the stream and returning to the sea after the act of spawning is accomplished. The old males become somewhat distorted, especially through the lengthening of the jaws, but the changes with age and season are not much greater than in any large trout. The true salmon, like the true trout, is black spotted. It is called in science *Salmo salar*, and along with the true trout it belongs to the genus *Salmo*. There is but one species of Atlantic salmon; it is found on both sides of the ocean, and on both sides it becomes, sometimes, land-locked and dwarfish when it is shut up in a lake, and when it cannot, or does not go to the sea.

In the North Pacific, on both coasts, there are five different species of fishes called salmon. They do not belong to the genus *Salmo*, but to a peculiar group called *Oncorhynchus*, or hook-snout. In all the species of *Oncorhynchus*, every individual, large or small, old or young, male or female, dies after the act of spawning is completed. All the tissues of the body become degenerate; the muscle is as dead as a dead cornstalk, and when the eggs, or the milt, are deposited, all life processes are at a standstill. This in itself distinguishes *Oncorhynchus* from *Salmo*. Other characteristics are the great elongation of the jaws in the old males, which are hooked over at the tip, and on which the front

teeth become greatly enlarged. The spawning fish change greatly in color and looks, the scales sink into the spongy skin, and so different are these spawning fishes from the same fishes in the spring, that no one would suspect them to belong to the same species. Technically, all the species of *Oncorhynchus* may be known by the presence of more than twelve developed rays in the anal fin, and more than twelve branchiostegal rays on each side underneath the gill covers.

They all spawn in cooling water, in the fall. The young descend the next spring to the sea. They feed only in salt water, and after about four years (sometimes three, or two) they re-enter the river, to cast their spawn and die. The old salmon never feed in fresh water. The different species have different habits. It is clear that the habit of running is a very old one. I have received from Dr. John C. Merriam, of the University of California, fragments of spawning salmon jaws embedded in rock about the Post-pliocene lakes of Idaho. These dead left-over salmon must be easily thirty thousand years old.

The largest and finest salmon is the Chinook, quinnat, or king salmon, known in science as *Oncorhynchus tshawytscha*. This salmon is the common salmon of the Sacramento and Columbia Rivers. As a food fish it is the best of all its tribe, and in size, when full grown, it ranges from fifteen to one hundred pounds.

It spawns in the fall, in snow-fed rivers, and as it ascends very far, it leaves the sea early, at the time of spring freshets. Up the Yukon it runs as far as Caribou Crossing, 2,250 miles, up the Columbia and Sacramento to their very headwaters. This species is the chief stay of the canning industry south of Puget Sound. Its value, commercially, far exceeds that of any other fish of the Pacific, the red salmon excepted.

The blueback salmon, Alaska red salmon, or Sukkegh ("Sock-eye"), *Oncorhynchus nerka*, is even more valuable

in the aggregate, for it runs in countless millions in Alaska. But it is a smaller fish, the average being six to ten pounds. Its flesh is drier, redder and coarser. In the sea, and in the early runs, its body is bright metallic blue in color, with white belly, unspotted. Later, the body turns crimson-red, while the head takes a shade of olive-green.

The names blueback and red salmon are both appropriate, according to the season. The red salmon spawns only in streams which flow into lakes. A stream without a lake never has a red salmon. Hence there are none in the Sacramento or Rogue Rivers. In the lake-fed Fraser River, in the Karluk River, and in the rivers about Bristol Bay, red salmon run in numbers literally fabulous. There are many in the Columbia. They run with the Chinook salmon, but sometimes, when a stream forks, each salmon goes its way; the Chinook to the snow-fed branches, the red salmon to the head of the lakes. The distance from the sea is immaterial. At Boca de Quadra, in Alaska, the river from the lake to the sea is not ten rods long, yet it is crowded with red salmon. In the Yukon, the red salmon range up the river to Lake Labarge, the first lake, about eighteen hundred miles.

The silver salmon (*Oncorhynchus milktschitch*) is of about the same size as the red salmon, and of much the same grade as food. It is faintly spotted, the top of the dorsal fin is blackish. Its scales are less fine than in the red salmon and more lustrous, and it does not turn red in the summer.

This species abounds all along the shore, especially northward. It runs but a short distance to spawn, rarely over a mile. For this reason it cannot easily be taken in large numbers. Its flesh is much paler than in the king salmon, or the red salmon, hence, notwithstanding its excellence, it brings a lower price when canned. It is then sold as Coho, or as "medium red."

The dog salmon or calico salmon (*Oncorhynchus keta*) has much the same habits, and it is common along shore

from San Francisco northward. It is the principal salmon of Japan, being salted in great numbers and sold under the name of *saké*. Its flesh is very pale and mushy, almost worthless when canned, but better when salted. Many are frozen and sent to the Eastern markets. The dog salmon, as the season goes on, becomes irregularly cross-barred with blackish streaks, by which marks it can be generally told from the others.

The humpback salmon, *Oncorhynchus gorbuscha*, has much smaller scales than the others. It reaches a smaller size (three to six pounds), and it may be known by the large black spots on its back and tail. It is rarely seen in California, but from Puget Sound northward it is found in unnumbered myriads about the mouth of every stream. It spawns near the sea and in any kind of fresh water. Its flesh is wholesome, but without fine flavor, and it is of a faded brownish color, instead of salmon red. It is largely canned under the name of pink salmon. It sells for about half the price of the red salmon, and is worth still less. Its value, at the best, is little more than the cost of canning, though, as already stated, as food it is quite wholesome, and doubtless as nourishing as the species which taste better and look better. Salted salmon bellies, as prepared in Alaska, are mostly from the humpback salmon, the body of the fish being thrown away. In actual food value, the five species stand in this order: Chinook, silver, red, humpback, dog. In economic importance: red, Chinook, humpback, silver, dog. In the United States, outside of Alaska, the Chinook far outvalues all the rest. But in Alaska and British Columbia, the red salmon greatly predominates. In Japan, only the dog salmon and silver salmon are commonly seen, the first far in excess of the second.

As a food fish, the Chinook salmon is finer and larger than the salmon of Europe. The latter, however, ranks with our steelhead trout, as superior to the red salmon and perhaps to the silver salmon also.

All the salmon take the hook in the sea, and are fairly game. In the rivers, they will sometimes snap at a hook, baited or not, but never for the purpose of feeding. They strike at it as though it were an annoyance, but they could not swallow it, as after the spawning season the stomach shrinks away till it is little larger than a cherry.

With the Chinook salmon is seen the greatest triumph of fish hatching. Now that the spawning grounds of the species in the Sacramento have been nearly all destroyed, the fish hatcheries turn millions of young fish into the rivers, after having led them past the period of greatest destruction from their enemies. But more salmon run in the Sacramento now than in the days when there was no fishing and no mining.

With the same treatment, the over-fishing of the Columbia, the Fraser and the streams of Alaska could be met and one of the best forms of food would continue to be one of the cheapest.

The rivers of Alaska, considered in relation to the salmon industry, may be divided into three classes: king salmon streams, red salmon streams and humpback salmon streams. The streams of the first class, from a quarter of a mile to a hundred miles wide at the mouth, have a long course and are fed by melting ice or snow, and the course for the most part is not through glacial lakes. In these rivers the king salmon or quinnat salmon run in the spring, as in the Sacramento or Columbia. With them run also a certain number of red salmon, and in the river mouths humpback, dog and silver salmon. The run of the king salmon is, however, the chief characteristic. The species in Alaska is less valuable than in the Columbia because, owing to the shorter run, the fishes are nearer the spawning season and a large percentage have white meat even in June, a larger percentage than the Columbia shows even in August. For various reasons, rough bottom, swift current, high tides, etc., most of these streams are not easily fished. In the Stikine River, for ex-

ample, traps are swept away by the currents, seines are tangled up, a deep gill net will meet an under current of salt water under the fresh water, and is thus upset. The only effective fishing gear is therefore a very shallow gill net floating in the fresh water at the surface. Rivers of the first class are the following: Yukon, Kuskokwim, Shushitna, Copper, Alsek, Taku, Speel, Whiting, Stikine and Unuk Rivers. The streams about Bristol Bay should not be placed in this class, as they flow through lakes and are essentially red salmon streams, in spite of their large size.

The streams of the second class, or red salmon streams, are those of large or small size which flow through lakes or have lakes tributary to them. In all these the red salmon runs freely, spawning always in the gravelly bed of the stream at the head of some lake. The four greatest of red salmon streams are the Fraser River, Karluk River, Nushegak River and Kvichak River, all large streams flowing through lakes. In proportion to the amount of water, probably no stream in the world normally carries more salmon than the Karluk River.

The streams of the third class, or humpback salmon streams, comprise the remaining streams of Alaska. These may be large swift rivers, as the Skaguay River, or they may be little brooks, in any case not frequented by the king salmon, and having no lake in the course, hence not fit for the red salmon. Their runs are confined to the ignoble species, which ascend for a short distance only. In the larger streams to the northward as Skaguay River and Dyea River, the dog salmon predominates. Southward as in Fish Creek, at Ketchikan and Anan Creek, the humpback salmon predominates, although the humpback is equally common in the red salmon streams. Some of these streams of the third class, as Fish Creek, flow through lakes. Presumably these lack fit spawning grounds.

The question as to what constitutes the mouth of the river is one of some importance in Alaska. The tides run

very high, often twenty-five feet or more, the high tide extending far up the estuaries, which at low tide may be occupied by fresh water. The Naha Stream at Loring flows through a series of lakes, the lowermost of which (Roosevelt Lagoon) lies close to the estuary of the stream, the water flowing from the lake over a considerable waterfall at low water. At high tide this cascade is reversed, the salt water passes by an overfall into the lake, which is thus converted into a brackish lagoon. It is a well-separated lake at low water, part of the sea at high water.

CHAPTER XVIII

A FISH OR AN ANIMAL



IN a congressional investigation of Bering Sea affairs, an eminent senator began the discussion with this question, "Is the Fur Seal a Fish or an Animal?" It is to answer this question for anglers that the present chapter is written. Some people doubtless think that the fur seal is a fish, even if we do not.

It was in the latter part of the eighteenth century that the Russian commander, Gerassim Pribilof, sailing eastward from the Komandorski Islands, after a voyage of almost a thousand miles, discovered the group of rock-bound islands in the eastern part of Bering Sea which to this day bears his name.

The group consists of two principal islands and two small outlying islets. The first of the islands discovered was St. George, so named from the vessel in which Pribilof sailed. A year later the second and more important island, St. Paul, was discovered. Pribilof found a great colony of fur seals on these islands, and loaded his vessel with their skins. Since that day St. Paul and St. George have become the principal source of supply for the seal skins of the world.

This little group of islands is the most important point in the whole territory of Alaska, and outweighs all the rest in interest to the naturalist. Indeed, it is doubtful if in all the earth there is a more interesting exhibition in zoölogy than is to be found in the little island of St. Paul. The islands have also great economic importance. There is probably no other spot of ground of its size in the world capable of

yielding to its owners greater financial returns on the capital invested than the island of St. Paul. On account of the economic value of the fur seal herd the islands have been the center of a great deal of international debate. They have, therefore, had considerable history in the past, and they will probably have more, of one kind or another, before this century is over.

The islands of St. Paul and St. George lie in Bering Sea, about 200 miles to the north of Unalaska, the principal harbor of the Aleutian chain, and about 200 miles south of Cape Newenham, the nearest point on the mainland. All the rock on each island is lava, hard, black and resistant, grinding up under the action of the waves and ice into coarse black sand. The island of St. Paul is very irregular in form, with many capes and rocky projections, ending in submarine reefs of lava. Its surface in general is flat and of no great elevation, but there are a number of volcanic craters, the most important one, Bogoslof, rising to the height of 600 feet. Its shore line alternates between steep, rocky cliffs and long stretches of lava sand. St. Paul Island is about thirteen miles long from northeast to southwest, and about six miles broad. St. George Island is smaller, being about ten miles long by four and a half wide. Its shore line for the most part is composed of perpendicular cliffs; there is very little beach line. The bays about the islands are shallow and rocky and there are no harbors. When ships visit the islands they have to anchor out at sea and make a landing whenever they can. In stormy weather it is "touch and go" to those who wish to reach and leave the islands.

During the short foggy summer the hills and uplands of the islands are covered with long moss, in which grows a great profusion of wild flowers—poppies, harebells, blue violets, monkshood and a host of dainty little plants, forget-me-nots and primroses, which have no names but their Latin ones. There is no timber on the islands, and

the only wooded plants are dwarf willow about six inches high and a species of crowberry, whose slender, wiry stems grope about in the moss.

In summer the air is chill and damp. The sun is seldom seen, and everything is enveloped in thick fog. In August and September the clear days become more numerous. The winters are cold, but the days are often clear. Much snow falls, but it is blown off into the sea by the driving winds. In the latter part of the winter great masses of floe-ice drift down from the north and pack about the islands.

Take it all in all, the climate of St. Paul is not one to attract human beings; but for the chief inhabitants of the islands, the fur seals, or "sea bears," as Steller called them, the climate is very satisfactory. The fur seals chose these islands for their homes on account of the damp and cloudy atmosphere and inaccessibility. They took up their abode upon them long years before man knew either the fur seals or the islands. They have no other home and do not land elsewhere than on the islands.

On the rocky shores of St. Paul and St. George Islands the fur seals have established their rookeries. To these they return with unerring precision each spring, the older ones coming back each year to the very same spot. On these rookeries they bring forth their offspring and remain until the storms of November and December drive them away. They then swim out through the passes of the Aleutian Islands into the North Pacific, in which they spend the winter. The older females and the bachelors go as far south as the coast of California, but the younger seals rarely pass beyond the latitude of Cape Flattery. The adult males do not go far south, and probably spend the winter in the Gulf of Alaska.

The old bulls return first to the islands. They begin to arrive about the middle of May, climbing over the ice to their place of the last year. Once located on his place, the bull never leaves it for upwards of three months. He will at-

tack with all the force of a grizzly bear any bull or man who may attempt to enter his square rod or so of ground.

The old bull, very appropriately called "beach master" by the earlier observers, is about as large as a bear, and is built like one, except for his flappy, oar-like feet. The fur seals are in fact not really seals at all, but belong to the bear tribe, having long plantigrade feet, modified for swimming. The true seal is a very different creature, having nothing in common with the fur seal, beyond his power to swim and his appetite for fish. The fur seal can walk, run and climb almost as well as the bear can, and it swims with its forearms with a powerful, paddling stroke.

For some time after the landing of the bulls, there is constant war between them, the younger ones trying to get places on the rookeries by ousting the older ones. Very rarely can a male of less than seven years maintain himself on the breeding grounds. Those of five or six years of age, after having been whipped off the breeding grounds, often climb upon the rocks above the rookeries or stand in the edge of the sea, looking into the promised land, and making the air vocal with expressions of unrequited affection.

The younger males accept the situation as a matter of course and make no attempt to go on the rookeries. They herd by themselves in great bands on special areas called hauling grounds. They spend their time sleeping on the sand and playing in the water. From these young males, bachelors as they are called, the lessees of the islands are allowed to kill a certain number for their skins. Those killed are chiefly three-year-olds. A fixed sum is paid to the United States treasury for each skin taken, and during a period of twenty years the revenue derived by the United States from the Pribilof Islands amounted to more than the total purchase price of the territory of Alaska. But of late years the seal herd has been steadily declining, because of the killing of females at sea by the pelagic sealers. Less

than one-tenth of the herd now remains, and consequently it yields but little revenue.

On account of the polygamous habit of the fur seal, the male population is in great part superfluous. The killing of the bachelors for their skins, therefore, is not only a source of revenue, but it is helpful to the well-being of the fur seal herd. The sexes are equal in numbers at birth. If all the males were allowed to reach maturity the quarrels among them would be a source of great injury to the females, and often to the pups. As it is, many females are killed, torn to pieces by competing lovers.

About two weeks after the males are established in their positions on the rookeries, the females begin to land, the older ones coming first. Their arrival is the signal for a general battle among the bulls, who are almost without exception gashed and seamed with scars. Usually the bulls near each other in time reach some sort of an understanding, and they will often unite forces to throw out an intruder. It sometimes happens that while two bulls are fighting for a cow, a third bull will step in and carry her off.

The average bull acquires a harem of from twenty to thirty cows—as many as he can round up and guard from intruders. The number varies from one to 100, and often those least fortunate at first will make up a full household before the late comers have arrived. The younger three-year-old cows arrive for the most part in early July. The cow seal is a very handsome animal, with a coat of soft brown of varying shades. She is smooth, plump and cat-like in her motions. Her voice is a loud bleat, like that of a sheep, but varies much in pitch with the different individuals. The females are more gentle than the bulls, but they snarl and fight among themselves, and often bring even the bull to terms by a sharp bite in the neck. At first the discipline of the harems is very severe, but as the season goes on and the bulls grow tired and sleepy from fasting, the

management of the rookeries falls largely into the hands of the cows, and they do as they please.

The single pup, a little jet-black fellow looking like a bear's cub and weighing from ten to twelve pounds, is generally born soon after the arrival of the cow. It is very active, hardy and tenacious of life, for the first week of its life dividing its time between play, sleep and bleating for its mother. When two or three weeks old the mother leaves it to go to feed. The bull objects at first to her going, but she always succeeds in getting away when his back is turned or when he is sleeping. She goes off 200 miles or more from the islands to the feeding banks towards the southwest, and may be gone anywhere from three or four days to more than a week. While the cows are gone the pups gather in great groups called "pods," and play or sleep. This podding of the pups is a wise feature in the fur seal economy, for it takes the little fellows out of the range of the harem, and from under the feet of the big lumbering bulls. The bull fur seal weighs from 400 to 500 pounds, consequently his stepping upon a small pup may produce disastrous results. But this is not often, for Kotik, the pup, is as tough as India-rubber, and pops out of the way as easily as a ball. The pups are rarely killed in the strife of the bulls, unless already enfeebled by attacks of the worm *Uncinaria*. This vicious little worm, about an inch long, is their sole enemy on land. The eggs are in the sand on which some of the pups lie. The worms hatch in the stomach, and fasten themselves to the small intestine just at its termination. They suck the blood of the young pup, and of those attacked probably nearly all die of anæmia. The same worm works great havoc among young dogs. Even children among the poor in Asia are attacked by a species of *Uncinaria*. According to Dr. Charles W. Stiles, the same worm is a large factor in the child-labor problem in the South.

By the time the mother seal comes back, plump and well

fed, the pup is very hungry. She hunts it up among the pods of sleeping ones by calling and smelling over them. The pup soon learns to know its mother's voice, and can distinguish it among the thousands of others that are constantly calling. She seems to recognize unerringly her pup's call, and can always recognize him by smell.

When the pups are from four to six weeks old they begin to learn to swim in the little sheltered pools among rocks off the rookery front. Swimming is an art the pup fur seal must acquire by patient practice. Its principal difficulty in learning to swim arises from the extraordinary size and weight of its head as compared with the rest of its body. In a few weeks it becomes expert and goes boldly out in the breakers. Then it goes off on long journeys about the islands, visiting neighboring rookeries and playing with the pups on them.

Early in August the discipline of the rookery finally breaks up. The old bulls, which have become lean and gaunt from their long fasting, go away to sea to seek food. Then the bachelor herds flock into the rookery, and the older ones assume the places of the bulls, rounding up harems of cows which pay little or no attention to them. But soon the novelty of the situation wears off, and the bachelors resume their places again on the hauling grounds or take to the sea.

The food of the fur seal consists of fishes and squid, always of species that swim near the surface in the open sea. Although the whole herd must devour millions of tons of fishes every year, they do not touch to any considerable extent any species which has economic value. Their feeding grounds are too far from the fishing banks for the interests of man and beast to conflict. The squid comes first in their bill of fare. Next comes the seal fish (*Therobromus californini*), a small smelt of the open sea, as yet known only from thousands of fragments found in the stomachs of fur seals. No one has yet seen a whole *Therobromus*. Next

comes the Alaska pollack, *Theragra chalcogramma*, a kind of cod found in Bering Sea convenient to the rookeries. For the rest an occasional fish of any kind available. A great many fish altogether, to be sure, but think of the quantities of fish that other fishes eat.

During the rest of the season the cows and pups, bulls and bachelors, come and go from the water and sleep on the rookeries and sand beaches. In November and December, when the winter storms come on, they leave the islands, class by class, and go down through the passes of the Aleutian chain into the Pacific ocean. The cows and pups leave first together, and with them go the younger seals of both sexes. The bulls and bachelors leave last, and on mild winters probably never leave at all, as during several seasons they have been seen about the islands throughout the whole winter.

The great seal herd takes a wide sweep in the Pacific ocean, their course tending in a southeasterly direction toward the coast of Lower California. As spring begins to come on they turn about and, following the coast of Oregon, Washington, British Columbia and Alaska, come back again by June to the Aleutian passes, and resume their places on the rookeries.

The American herd on the Pribilof Islands constitute a distinct species, *Callorhinus alascanus*. Its fur is much more valuable than that of the other species of fur seal. On the Russian Islands, Komandorski, or Commander Islands, Bering and Medni (Copper) Island, there is a second species, *Callorhinus ursinus*, very much like the first, with the same habits, but rather smaller, darker in color, and with the neck and head more slender. Of these, there are about half as many individuals as in the Pribilof herd, and the number is similarly falling away, and for the same reasons. More than half of all these are massed together in the gigantic rookery called Severnoye, on the north end of Bering Island. On the little island of Robben in the

Japan Sea, now Japanese, is a small rookery of a third species, *Callorhinus curilensis*. This fur seal has the inner fur yellowish white instead of dark brown, like the others, and it feeds in summer in the Japan Sea, instead of the open ocean. Among the Kurito Islands (Usushir, Srednoi, Rai-koke and Broughton) were once small rookeries of this Japanese species, but in the early days these were all destroyed by American marauders.

In the South Pacific and Atlantic are numerous scattered rookeries, all of them nearly destroyed by lawless raiding. The fur seals of this region belong to another genus, *Arctocephalus*, quite distinct from *Callorhinus*, the genus inhabiting the north.

The only salvation of any of these herds lies in an international game law which shall prevent the killing of the females. As the females and young males cannot be distinguished in the water, and as more than half of those on the summer feeding grounds are females, gravid—and also with a dependent pup on shore—common decency and the perpetuation of the herd demand the absolute prohibition of all killing at sea. In the same way, as killing at sea is a legal right of Canadian and Japanese sea-rangers, the United States and Russia must be prepared to extinguish by purchase this vested right of mischief.

CHAPTER XIX

THE ANNALS OF THE PORCH CLUB

"Verily," said Piscator, "Avalon is surely the home of the gods of the sea. Why, once when I fished for the leaping tuna, a monster sprung from the sea and seized my hook, a huge flapping beast with a nose like a bowsprit of a ship, and with great wings like a dragon. I don't know what it was, whether it was an Ichthyosaurus or——"

"Maybe it was a whale," said the sympathetic listener.

"A whale, a whale! Why, man, we were using whales for bait!"

—ANCIENT CALIFORNIA FISH STORY.



THE layman often wonders, perhaps, where all the fish stories originate. They come from the Porch Club, an unorganized organization which holds forth at Santa Catalina Island, where you may see the members any evening, sitting on the club porch, listening, discussing, debating, inventing or retelling stories. Here the tale of Cleopatra's herring is brightened up and told to some tenderfoot, and bank presidents, university professors, divines, chiefs of departments, men of high and low degree, captains of industry, generals, dukes, princes and admirals, sit, and tell what they have done, and provide the whole world with fish stories. All, from princes of the realm, traveling *incognito*, to plain anglers, appear to be affected by the influence of Ananias or Sapphira (one is as malign as the other), telling stories about their catches and experiences on the fishing grounds with all the semblance of truth; stories which they know, and their listeners know, are impossible; yet the hearer immediately seizes upon that story, and hies him home, perhaps to some distant land, and tells it as his own. And so fish stories are made, and cir-

culated, and, strangely enough, the world is better for it, and the gayety of nations assured an everlasting imperishable perpetuity.

The Porch Club has several thousand members scattered over this country, England and Germany. There are no dues. No one ever saw a list of members, nor did a member ever confess that he was one; yet the Porch Club exists; has a president, an hourly session, and all the real fish stories of a violent and inexplicable character emanate from here.

The Hague may be a remarkable machine for promoting peace and good international digestion, but it could take pointers from the Santa Catalina Porch Club, which is at peace with all the world, even with the fishes, it is said, as its members will not go a-fishing; they sit on the porch, and in lieu of angling, tell what they once did on these charming waters of the Kuro Shiwo, to the wonder and consternation of the stranger and alien.

About four-thirty P. M. the Porch Club is in full session, and the conversation falls on light and heavy tackle, long or short butts, whether one thinks in words, or whether chum should be shoveled over, or whether boatmen should all be good-natured, or whether they should have some individuality or none. And then, the fresh-water anglers thresh out the question of worms or flies.

“Let’s talk of graves, of worms and epitaphs.”

“Speaking of worms,” said a Professor from Yale (and the Porch Club stops rocking and listens), “reminds me of the extraordinary and true experience of a friend of mine. He had been tied down to business for a year or two, and had come down to New Haven to have a few days among the trout streams of his boyhood. You can realize his feelings, as he started out one morning, to cast in the same little pools he knew so well as a boy. But sawdust and other things had arrived, and late in the afternoon he wandered into a farm-house, dry, disgusted and troutless. He had

his rod on his shoulder, and as he entered the yard he laid it down, walked up to the house and knocked on the door. As he waited *ze-ze-e-e-e-e!* came the buzz of his reel, the first time he had heard it that day, and then followed a loud and awful squawk. As he turned, he saw a big buff cochin rooster dash into the air; the bird had swallowed the worm, and hooked, had flown into the air like a tarpon, and by the time the angler caught the rod, he had taken fifty feet of line, and was prancing in great bounds and leaps around the yard, uttering squawks and cackling at the top of his voice. There was but one thing to do to save the rooster and the valuable rod, so the angler began to reel in the rooster, giving it the butt in good fashion; now yanking it down from flights into the empyrean, then slackening away, as it bounded over a fence; reeling, running, putting up a game fight and really enjoying the novelty of it, when some one called out,

“‘What in —— are you doing with that rooster?’

“‘I’m trying to land him,’ cried the angler. ‘You don’t think I’m fishing for him, do you?’

“‘Wal, it looks like fishin’ to me,’ answered the farmer.

“‘Not on your life,’ said the angler. ‘That line cost ten dollars; it’s a duplex braided salmon line.’

“‘And that rooster’s a prize bird,’ shouted the farmer, starting after it, ‘Rameses IV., out of Nero.’

“‘Around the barnyard they ran; the angler reeling and giving the butt, pumping and lifting, making line when he could; the farmer swearing; pigs, calves and cows bolting at the awful noise. Finally the irate owner fell upon the rooster and found the hook impaled in its throat.

“‘You’ll pay ten dollars for that,’ exclaimed the farmer.

“‘All right,’ retorted the angler. ‘Give me the rooster,’ and he paid the money, threw the bird over his shoulder, and tramped home with the queerest game ever taken with a rod.”

“‘Good enough for him!’ growled old B. “No honest

angler would ever use a worm. Caught a Shanghai rooster, eh?" and old B. led the laugh which raised the porch an inch.

"Speaking of birds and fishing," continued the Yale Professor, "some years ago I was living on a ranch in Arizona. I'll never forget it, as one day, a sandspout struck the dinner outfit, and sent about forty tin plates half a mile in air; it rained tin plates in Cochise county for a week. On the place was a long-armed windmill, which worked with a bucket. One morning a cow-puncher came in and said there was a queer lot of birds trying to pump the windmill. I went out, and there were three or four gulls sitting on the arms of the windmill. As their weight turned the wheel over, they would hop on to the next arm above, and then the next, turning the wheel slowly, but surely, and in a short time water began to flow out of the nozzle.

"Now, how these gulls knew it, is more than I can tell, but Don Ramōn, who owned the ranch, had put some trout in the well, and as the gulls hopped from arm to arm, turning the wheel, a trout came out, and one of the gulls flew down and caught it, then flew up again, alighting on the windmill wheel. These gulls would have cleaned up all the fish if Don Ramōn had not come out. I consider that a most remarkable illustration of the intelligence of gulls."

"Excuse me," said R., looking at the speaker, "are you a nature writer?"

"No, I am not," replied the Professor with a show of indignation. "Why?"

R. made no reply. He was watching the Duke (let us say of Devonshire, because that was not the name on his cards) out of the corner of his eye. The Duke had come to Santa Catalina, *incognito*, to catch a tuna, and he was the only man on the island who did not know that he was known to every one; yet no one told him, and he was accepted by the Porch Club members, that being the guileless, hospitable and unsuspecting way they had of taking in the stranger. R. was musing, and for a moment he was uncertain what

vintage to draw on the Duke, then he selected one of 1492, alleged to have been told by Columbus. It was not complimentary to the Duke; but then the Duke did not care to be complimented, and the story was good; if it had not been, it would have been worn to a frazzle long ago.

"Bill's wife had a baby last week," he said, looking at the rest, but talking at the Duke. "He was so delighted he came down to the Club to borrow D.'s scales. What do you suppose the young gaffer weighed when he was three hours and sixteen seconds old (I forget the latitude)? Seventy-five pounds, it's a fact. Bill told me that D. gave him ten dollars to keep still about it."

The following day the Duke hunted up Bill, and gave him four bits to explain the story. "There must have been a joke in it," he said, "as they all laughed, you know."

"Yes, that's a great joke," replied Bill, pocketing the four bits. "The baby was weighed on the scales Mister D. always weighs his fish on, and the babby weighed seventy-five pounds."

"You're an Englishman, are you not?" asked the Duke.

"Yes, sir," was the reply.

"Well, what's the joke in a child being a little heavier than usual? I should consider it a piece of luck, though seventy-five pounds is a trifle heavy for a newly-born infant."

"There hain't no joke in it, sir," whispered Bill. "What these ere bloomin' Hamericans calls jokes, is a mighty different harticle from what we have in Hingland."

The Duke was not satisfied, and it was bruited around, that he was going over to the mainland to have an operation performed, a trepanning, or something, to let in the joke, some said. But this was probably an exaggeration; it certainly could not have been as bad as that, and that, too, sounds like an old story.

The next day after the boats came in, the Porch Club was lined up again, telling what they had done in the past

twenty-four hours; an innocent and agreeable-looking lot of men, with here and there a tenderfoot sitting among them, taking in the conversation. Among them was a poet, a contributor to the Eastern magazines, it was said, a seeker after facts and information; and this in a general way is about what he heard, not from the minutes, as the Porch Club keeps none—that would be too hard work.

"It's a wonder to me," began some one, "that the government inspectors have not provided for such a contingency before. How did it happen, General? And permit me to congratulate you on your escape; and you, too, Senator."

"Don't mention it," replied the General. "You see I was trying my new reel, a great reel that. The most remarkable feature is that it holds nearly a mile of No. six line, or to be exact, $5279\frac{3}{4}$ feet," and the General glanced at the earnest face of the newcomer on the last boat, who had hitched his chair a little nearer, and who seemed startled. "Yet it will stand a dead weight of a hundred and forty pounds. I had it made for the yellowfin tuna, and when trolling off the bay, the Senator had a strike and missed; then I had one, a strike that nearly lifted me from my seat. But I recovered, and first put on the thumb-stall; but the speed, the rush of the line dried it out, and set it on fire. Then I put on the click, and the emergency brake, and I could hear the brass filings of the click strike against the face of the reel like hail, as they flew off under pressure. I estimate that in that rush I lost over half a mile of line, despite the fact that the boatman had turned the launch, and we were steaming after the fish at a rate of fifteen miles an hour. I don't overestimate that, do I, Senator?"

"You don't," was the reply.

"I saw that something had to be done," continued the General as he lighted a cigar, "so I clapped on the Rabbeth drag, as a sort of last resort, and up into the air went a puff of peculiar white smoke; I felt something give, and just

then the Senator said, 'General, it's melting.' Those were your precise words, were they not, Senator?"

"I was there," answered the Senator diplomatically.

"That reel had caught fire," the General continued, "and was melting under the terrific rush. I held it as far off as possible, so that the molten drops fell into the boat, but the rod caught fire, and, gentlemen," and the General's cold blue eye traversed the group of attentive listeners, "the Senator and I witnessed a sight probably unique in the history of angling. The rod burned to a cinder, the metal reel seat melted, the agate guides cracked, and exploded, and, as I held the rod up, giving the fish the butt for the last time, we saw the fire catch that oiled silk line and follow it down into the blue ocean like a streak of lightning; the line became incandescent. I was peering down into the water watching it boil, and sizzle, when the boatman cried 'fire,' and turning I saw him and the Senator fighting the flames; the oil around the engine had caught from the melted reel.

"We were in immediate danger, but, fortunately, we had several bait buckets aboard, and for two hours we fought the flames. We had life preservers, but the oil in the tank exploded, and we were surrounded by burning oil; we couldn't jump overboard for the water was afire. So we fought the fire and finally put it out, but even then we were in danger as the fire on the water now began to eat into the hull, and we had about given up, when my friend B—— came along and, with a splendid disregard of danger I never saw equaled, fought that fiery water to a finish."

"Don't mention it," said B——. "It was a pleasure, a mere bagatelle. You see," he explained, "I go well provisioned, and we had at that time about seventy cans of mock turtle soup aboard, and it suddenly occurred to me that I had heard somewhere that mock turtle was an irritant to any sort of combustion; the rest was easy."

"I saw you," said the General, "pour can after can over, and your heroic boatman feeding you as you worked."

"A mere nothing," said B——, waving fame aside.

"The most remarkable thing, gentlemen," continued the General, "the one which impressed me most, was the action of a vast school of tunas, bonitos, dolphins and deep sea minnows. They, of course, thought the soup was chum, and as they dashed into it, wild with excitement, they became surrounded with burning oil and were cooked upon the instant, and when the fire was entirely extinguished both of us, B.'s launch and my own, were so surrounded, and packed in, by a great stratum of fish fried in oil, that the propellers would not move, and here we are indebted to you, Commodore," said the General. "If you had not come by, and loosened us up, we should have been there yet. He literally dug us out," he explained to the group of listeners, "by hauling away the dead fish, making a channel or lane into it. How long was that channel, Commodore?"

"Not more than an eighth of a mile," he replied; "a mere nothing. You heard me when I hailed from the outside rim?"

"I did," answered the General.

"Pardon me," said the listening poet and literary man from the East, "but that's the most extraordinary incident I have ever heard of. Would you mind my making a note of it; jot it down, you know?"

"Not at all," replied the General, thinking of *Pickwick*; "give you a dozen more like it if you wish."

"Eh, a dozen more! But I would like to ask one question. Did you ever see the fish that you hooked?"

"No, I did not," said the General cautiously, "but a timber schooner reported at San Diego that they ran into a big tuna floating off the Coronados not long after, and, in trying to haul it alongside, it fell in pieces, as though it had been cooked, and they estimated that it was something like twenty feet long."

One hears some odd tales at Avalon (is it not here that fish stories are created?) and among the boatmen are some

strange characters. Up the cañon lives one Barney Rafferty (this name is as good as any), he of the confessional. Cabrillo is said to have told the story, or perhaps it was Cabrera Buena. Barney had led a wild life on sea and land, and there were hints and suggestions of piracy, of smuggling and of the Spanish main. In due time, so it is said in the Porch Club annals, Barney was induced to go to confession in the old mission in Los Angeles. He had many sins to confess, and in fear and trembling took an old friend and boatman, one Phil O'Connor, with him. Barney entered the confessional, and for two hours old Phil sat hard by, waiting; then the good father came out, weary and haggard, mopping his face, and disappeared, but Barney remained.

Old Phil stood it a few minutes longer, then he crept up to the confessional, lifted the black curtain, and whispered, "Are ye there, Barney?"

"I am," replied the penitent.

"Are ye through?" asked old Phil.

"Through, is it?" retorted Barney, "we've just begun."

"But where's his riverence gone?" asked Phil, in hushed tones.

"Bedad! I don't know, but I think for the police?" was the answer.

It was the same Barney who took a tenderfoot out and left him upon a rock, where he waved a scoop-net half the night at the small bats of the island, believing them to be flying fishes, and that this was the manner of capture. Another time, he carried an angler new to the wiles of wits and wags of the Pacific, far up into the mountains in a deep cañon where he left him holding open a gunny sack, by the mouth of which was a lighted candle—the lure for snipe. When the morning began to break, the victim, weary and chilled to the bone, came in, still believing that bagging snipe was one of the sports of the Isle of Summer, as he said he had caught no snipe, but he had heard them.

It was Barney's son, a chip of the old block, according to these veracious annals, that sat trembling in his seat in the little school one day when a great revivalist came and began to question the pupils.

"Who," he demanded sternly, "led the Israelites into the land of Canaan?"

No one answered.

"That boy in the corner," said the revivalist, pointing his finger at Barney, Jr., and repeating the question.

"It wasn't me," cried the son of his father, rubbing his eyes. "We've just moved over from San Pedro last week."

You may have heard this story before, it has gone over the world, but it was born on this angling island. It was this same young Barney who hearing the teacher say that God was everywhere, asked solemnly, with troubled air, if he was sitting on him. That and many more were told by Barney of his offspring.

Barney the elder occasionally went to Los Angeles, to place in more complete circulation his savings, and once, it is said, he rolled up to the ticket office, and bracing himself as became a man of the sea, three sheets or so in the wind, demanded a ticket.

"Where do you want to go?" asked the official.

"What trains have ye to-day," replied Barney, "an' I'll make me selection."

It was Barney who illustrated the goodness of heart of the people of Portuguese Bend, a hamlet hard by the island. One day in Lent he took a fine striped bass and, thinking to inflict upon himself a penance, as he craved the fish with fierce appetite, he sent it to the family of Pedro Carmelo. Pedro, having heard that the Fiënzis, a Portuguese family, were poor, carried it there with the blessing of the Virgin; but Vincènte Fiënzi, though dying to eat the fish, also be-thought him of the penance, and sent it over to Father Malone, who was visiting one Romero Carzone, an abalone

fisherman, who needed the ministrations of the church. Father Malone was a Dominican, and his mouth watered at the sight of the splendid fish, but seeing the opportunity to inflict upon himself a moral castigation of the stomach, denied himself, and sent the bass over to the widow Romèro, whose husband had been a Venetian gondolier in days gone by. She, in the goodness of her heart, thought it was too much of a blessing for her in Lent, so she took it to the old mother of Billy Fogarty, the crawfish man, who had lost his traps in a gale at San Nicolas that spring. Here the fish found rest until the next morning, when this good woman, thinking of some penances she could inflict upon her soul, and stirred by the talk of the priest that night, forwarded the fish by one of her boys to Francisco Salvatierra, who cleaned the light at Point Firmin.

One might think that the end had come, but Francisco was well burdened with years, and had vowed to eat no meat or fish for forty days, on account of a transaction which he had confessed to, and meeting Antonio Benichi, a net hauler of the Bend, going home, he offered the bass to him, and the next day the fish reached the Bend again, still holding together as became a bass, still intact, but owing to the warm winds, somewhat the worse for wear and white in the gills, after the fashion of the tribe; indeed it had, by this time, due to its continued journeying, "an ancient and fishlike smell." It is said there were other transfers, of which the record is lost, but on the day of San Xavier, the fourth day of its travels, the good father was sitting by Barney—the original owner—as he mended his nets, and talking on the subject of religion and the necessity of penance for sin, when the son of one Tony Roscali, a seiner, came along and laid down a gunny sack in front of Barney, from which rose a keen and penetrating odor. Out of it he took a dilapidated, sunken-eyed, white-gilled bass, saying that his father had sent it, with the blessings of Heaven, remembering the goodness of Barney, when his sister-in-law's mother

was sick the week before with a "hackness or ki-tarrh of the throat."

"What yer riverence was sayin' about castin' bread upon the waters, applies to fish too," said Barney, and then and there he gave utterance to that famous saying, "I supposed it had went, but it has came," which will always live.

"It looks that way," the good father answered.

So one might delve into the annals of the Porch Club of Avalon, and find innumerable tales that would surprise and delight the stroller along these sunlit shores by the western sea.

CHAPTER XX

THE UNNATURAL HISTORY OF THE SEA*

There is nothing more desperate than an angry fish.

—JOHN HANCE, OF BRIGHT ANGEL.



HERE is an American play in which the hero—naturally an angler—conceives the horrible suspicion that he may be also a “genius.” A genius is one who knows things without having to find them out. Some time since I met a voluminous writer on angling and hunting, who had never gone fishing but once, and who had never seen a bear, except in a menagerie. “That man is a genius,” said a friend at the time. “He has the gift of seeing himself fishing and killing bears, when in his city flat. He can work out all the details of strenuous sport in his mind’s eye without paying ten dollars a day for gaffer or guide, and he tells it better than any of you sportsmen. Such a man is a genius!”

It is well to know just what a genius is, but it is sad that a genius should be able to hold back the waves of zoölogical knowledge in America. Applied to current events, his method is that called “yellow journalism.” It is only lately that yellow journalism has turned from fashion, graft and politics, domains exhausted, to the fresh fields of the woods and the pastures. Still sadder it is, that driven from these by the shadow of the BIG STICK, it has invaded the Haunting Silences of the depths of the sea.

But so it is. Not a week passes by without some exhibi-

* With reference to “The Haunters of the Silences,” by Charles G. D. Roberts.

tion of the unnatural history of the deep, deep sea. I once wrote an article on the luminous animals of the Pacific. With their shining glands and luminous headlights of pale, cold, green fire, the truth of these creatures is stranger than their fiction. Their strange weird forms, their long barbed teeth and waving tentacles, the lamps they bear, with phosphorescent glow, all this aroused my enthusiasm and sharpened my pen. But the ink I used was black, and it fell below the range of the yellow standards. As the paper was copied and syndicated, the brightness of the colors grew, and to each fish was assigned a bulb of light of the latest Edison pattern. People would read the article now, which they would not, so long as it remained mere truth. Fiction is surely livelier, and, moreover, is much more easily produced than mere truth.

Two years ago the minute infusorian, *Peridinium*, appeared on the California coast in such vast numbers, that the water was colored the dull reddish hue for miles along-shore, and at night was brilliantly phosphorescent. Certain papers indulged in remarkable flights of the imagination. The light was described as "rotted sea weed," caused by escaping gas from cracks during an earthquake. Some persons were alarmed, as they had been told that burning sulphur had escaped from an earthquake crack in the earth. Possibly it is not necessary that all who run should know about the peridinium and its powers of emitting light when shaken or disturbed; yet, it is generally understood that the people are taxed for a supply of adequate information along certain zoölogical lines.

The genuine animal story is always fascinating. There are two types of such story, and both may belong to literature, and both are legitimate. In the one case the animal occupies the center of the stage, its form and its habits, clearly and truthfully exhibited, while beside it, in contrast are the emotions which a decent man may feel when brought into such good company. An animal story of this sort is

John Muir's incomparable biography of the water ouzel, as he knew it in Ouzel Basin, on the north flank of Mount Brewer. A genuine animal story is Irving's sketch of the bobolink. A bobolink himself could not have done it better. Flashes of the same method are seen in Thoreau's sketches of squirrel and bird and ant, of oak tree and minnow in the brook. These and their kind are as perfect as Corot's landscapes, and as difficult of imitation.

In the other kind of legitimate animal stories, the author's imagination occupies the center of the field. The animals can talk, or sing, or dance, or tell fortunes, or play cards, and nobody is deceived. When we learn from Joel Chandler Harris how the rabbit lost his long bushy tail, we know that the author is not rigidly adherent to the principles of tail evolution. When we are told by Rudyard Kipling how the kangaroo acquired his long hind legs through the thirst for popularity and the dingo dog, we do not care even if a geologist shows us that the kangaroo was in Australia, legs and all, a thousand centuries before dingo dogs or any other dogs had been imagined. These are the "just so" stories, the "good fun" stories, the tales which represent the gradual evolution into supernatural cleverness of the ancient Mother Goose.

But there is another kind of animal story—the story that will sell, the story that is half sentimentalism and the other half lying. And this is the sort that leads Theodore Roosevelt, naturalist and sportsman, to forget the existence of another Roosevelt, statesman and party leader, and to brandish in zoölogy the big stick that is his, through international politics.

It wouldn't matter much if this stuff were for the consumption of hammock-swinging novel readers. The thin flow of drivel which passes through their minds is improved by any suggestion of realities. But to use this stuff in the schools, that is the pity. There is enough ignorance stalking abroad without filling with it the storehouses of the

future. We ought to depend on the children to correct our own mistakes. Unnatural natural history seems to be bred in the schools, and its authors are certainly tutored in the rudiments of many desperate studies. And without further delay, we will take up a book nicely printed, illustrated by one of the cleverest of artists, which, in the spirit of Baron Munchausen, takes up the dwellers of the sea, with the claim, not peculiar to the Baron, that "his stories are in accord with the latest scientific facts as bearing on the several cases."

The play opens with a big barracuda from the Bahamas, lying under the seaweed far out in the open sea. Barracudas do not swim in the open sea, but this one needs it for his stage setting. Next, the barracuda is seized by a shark. How a shark catches a barracuda is not known to fishermen, but this one is caught. Then comes the terrible saw-fish, a kind of ray, which feeds on crabs and sardines in the muddy estuaries of the tropics, at the best, a luncher on fricasseed mullet, which it slashes right and left with its saw. This beast is naturally a terror to man. As the narrator's blood chills and his feet grow cold, appears another horror, this time a man-eating shark; lying motionless in the water (which it can only do when it is sick or dead, and then it sinks). It is, in fact, asleep, and on it rushes the horror-creating saw-fish, which with one slash disembowels the shark, and with its stomach filled with the fragments, vanishes into the vasty deep.

Next appears the narwhal, the whale with a long bony spear on its nose. It is described as spitting the salmon on its horn. But the white bear swims down under water, grabbing the narwhal from below. But the beast with the nose rises to the occasion, and spits the bear, as it has previously disposed of the salmon, and as it usually stabs young whales. This is an excellent tale of one of the most timid of whale-like creatures, but it smacks of the seventh-floor flat, and the inkstand busy with pot-boiling. This

may be a mixed metaphor, but so is the subject of which it treats.

But the giant squid breaks the record for animal propensities. As we know the creature, sixty or seventy feet long, it has a beak something like that of a parrot, opening two or three inches. It is a slow nipper, and cannot swallow anything that would not pass through the beak of a hawk or an eagle.

But the naturalist of the literary Porch Club tells us of a giant squid, lying on the bottom (as only an octopus or a nature fakir can lie) which devoured two basking sharks, each six or eight feet long (though none of less than thirty feet are in any museum). Besides these, it swallowed a saw-fish ten feet long, a feat a giant squid could not accomplish in a year, even if it were omnipresent; for the basking shark breeds in the Arctic Ocean, and the saw-fish in the tropic gulfs. They are never near neighbors, save in the stomach of a squid, on the seventh floor back, in New York City.

But this was merely the sharpening of the appetite; next comes a swordfish seven feet long. It is grasped by a tentacle, and "the squid hauls the swordfish down and crams it into its cavernous mouth." There is nothing like exactness in figures. Briareus of the hundred arms, and Argus equally well fixed for eyes, offer similar models of precision. The swordfish was seven feet long, and the squid's horrible mouth must have averaged seven feet wide.

The writer has played with the giant squid, when it has been safely caught and in alcohol. In a specimen forty feet long he could barely force two of his fingers into the mouth. One twice as long could not take in a man's hand. It matters not what Professor Verrill of Yale, the highest authority on squids, may think. It matters nothing for figures and measurements in exact government reports. It matters not, that of all large animals, the giant squid has, perchance, the narrowest gullet. It matters not that we outdo Jonah

and Olaus Magnus and Pontoppidan. It matters nothing about nothing, so long as the stuff will sell, and especially if it is bought wholesale by the schools.

It is true that the unnatural author disclaims having seen these miracles, but he gives them to the easy American public with the guarantee that he has spared no pains to make these stories accord, so far as the natural history facts are concerned, with the latest scientific information.

It is some years since I saw a giant squid, and four or five since I handled, kept alive and examined specimens eight feet long; but it is evident, if this is true, that in the interim, glove stretchers have become the fashion in the deep sea, or the squids have laughed so heartily at modern fish stories that their mouths have stretched from a few inches to seven or eight feet.

Does our modern Magnus stop here? Not he. Notwithstanding the fact that the squid is, as a rule, the open-water dweller of the group, he confuses their habits, and shows us the giant squid creeping into a cave, then into the cabin of a ship. Then the squid, one of the most timid of all animals, is endowed with all the habits of the octopus, a cave-loving creature, also very timid, and, doubtless, would not attack a diver unless cornered. This monster is seen to crush a glass plate in a diver's electric light. Nothing is said about its using a hammer, so it is assumed to be main strength. Finally the giant squid is destroyed by the great killer, or orca, a creature so useful in the water that it ought to be introduced on land.

These fish stories are a new brand of unnatural history fish stories, yet we are told they are true to science. Some day when the author of them decides to go down to the sea, to see real squids, real orcas, and perhaps talk with the men who know them, like Verrill, mayhap he will find a chair on the Porch Club in the vale of Avalon, and perhaps the owner of the Candelaria will tell him of the melting reel, and show him the scars on the launch in which they fought

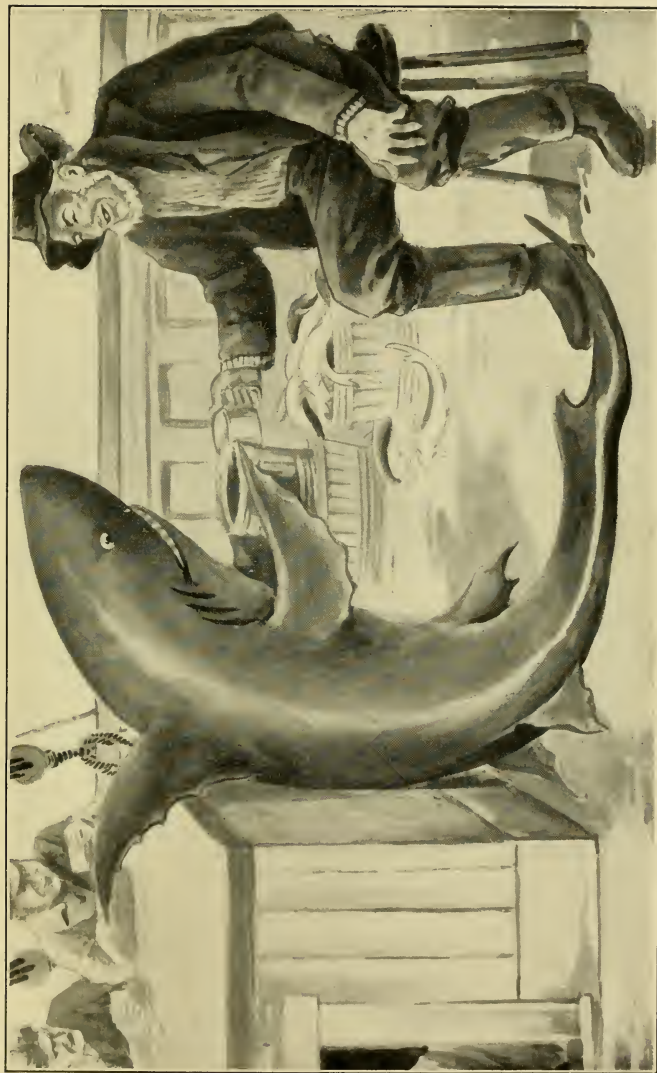
fire so long. Then the eastern story-teller will begin and tell the story of his squid, whose mouth, two inches across, held a swordfish seven feet long. And then these prodigious sons of Ananias of the Porch Club, to the last man, will rise and steal away. In the picturesque language of Barney Rafferty, they will have met the author of the "Haunters of the Silences," and "have went."

If such descriptions belong to the category of wild fish stories, "just so stories," fairy tales worth reading for the inventor's skill, then well and good. Let them all be as funny as they can, and welcome to their side the raccoon and the road runner of Wolfville, the mice and lions of Æsop, and the whimsies and dragons of the children's books extraordinary. But the solemn asseverations of veracity, the design to secure place in the libraries of the high school, and the Sunday-school, put these books in a bad light. It is hard enough to teach children to see the truth and to believe it when they see it. The aim of these books is to undo all the good that has been claimed or achieved for genuine nature study. As an antidote to the "Haunters of the Silences" we may place the older tale, equally well vouched for, under the inspiration of which the other essay may have been written:

THE SHAG-EYED SHARK.*

The mackerel bit as they crowded an' fit to grab at our gange-in'
weight;
We were flappin' em in till the 'midship bin held clus' on a
thousand-weight;
When all of a sudden they shet right down an' never a one would
bite,
An' the Old Man swore an' he roared an' tore, till the mains'l nigh
turned white.
He'd pass as the heftiest swearin' man that ever I heard at sea,
An' that is allowin' a powerful lot, as sartainly you will agree.
Whenever he cursed his arm shot up an' his fingers they wiggled
about,
Till they seemed to us like a windmill's fans a-pumpin' the cuss-
words out.

* Reprinted with the permission of the author, Mr. Holman Day, and of the editor of the "Saturday Evening Post."



THE SHAG-EYED SHARK.

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He swore that day by the fodder hay of the Great Jeehookibus
whale,
By the Big Skedunk, an' he bit a hunk from the edge of an iron
pail,
For he knowed the reason the fish had dodged, an' he swore us
stiff an' stark
As he durned the eyes an' liver an' lights of a shag-eyed skulkin'
shark.
Then we baited a line all good an' fine an' slung 'er over the side,
An' the shark took holt with a dreadful jolt, an' he yanked an'
chanked an' tried
To jerk it out, but we held him stout so he couldn't duck nor swim,
An' we h'isted him over—that old sea rover—we'd business there
with him.

A-yoopin' for air he laid on deck, an' the skipper he says, says he:
"You're the wust, dog-gondest, mis'able hog that swims the whole
durn sea.
'Mongst gents as is gents it's a standin' rule to leave each gent his
own—
If ye note as ye pass he's havin' a cinch, stand off an' leave him
alone.
But you've slobbered along where you don't belong, an' you've
gone an' spiled the thing.
An' now, by the pink-tailed Wah-hoo fish, you'll take your dose,
by jing!"
So, actin' by orders, the cook fetched up our biggest knife on board,
An' he ripped that shark in his 'midship bilge; then the Old Man
he explored.
An' after a while, with a nasty smile, he giv' a yank an' twist,
"Hurroo!" yells he, an' then we see the liver clinched in his fist.
Still actin' by orders, the cook fetched out his needle an' biggest
twine—
With a herrin' bone stitch sewed up that shark, all right an'
tight an' fine.
We throwed him back with a mighty smack, an' the look as he
swum away
Was the most reproachful kind of a look I've seen for many a day.
An' the liver was throwed in the scuttle-butt, to keep it all fresh
an' cool,
Then we up with our sheet an' off we beat, a-chasin' that mackerel
school.

We sailed all day in a criss-cross way, but the school it skipped
an' skived,
It dodged an' ducked, an' backed an' bucked, an' scotted an' swum
an' dived.
An' we couldn't catch 'em, the best we'd do—an' oh, how the Old
Man swore!
He went an' he gargled his throat in ile, 'twas peeled so raw and
sore.
But at last, 'way off at the edge of the sea, we suddenly chanced
to spy

A tall back-fin come fannin' in, ag'inst the sunset sky.
 An' the sea ahead of it shivered an' gleamed with a shiftin' an'
 silvery hue,
 With here a slash an' there a dash, an' a ripple shootin' through.
 An' the Old Man jumped six feet from deck; he hollered an' he
 says, says he:
 "Here comes the biggest mackerel school since the Lord set off
 the sea!
 An' right behind, if I hain't blind, by the prong-jawed dog-fish
 bark,
 Is a-finnin' that mis'able hog of the sea, that liverless shag-eyed
 shark!"

But we out with our bait an' down with our hooks, an' we fished
 an' fished an' fished,
 While 'round in a circle, a-cuttin' the sea, that back-fin whished
 an' slished;
 An' we noticed at last he was herdin' the school an' drivin' 'em
 on our bait,
 An' they bit an' they bit an' we pulled 'em in at a regular wholesale
 rate.
 We pulled 'em in till the "Sairy Ann" was wallerin' with her load,
 An' we stopped at last 'cause there wan't no room for the mackerel
 to be stowed.
 Then up came a-finnin' that liverless shark, an' he showed his
 stitched-up side,
 An' the look in his eyes was such a look that the Old Man fairly
 cried.
 We rigged a tackle an' lowered a noose an' the shark stuck up
 his neck,
 Then long an' slow, with a heave yo-ho, we h'isted him up on deck.
 The skipper he blubbered an' grabbed a fin an' gave it a hearty
 shake;
 Says he, "Old man, don't lay it up an' we'll have a drop to take."
 An' actin' by orders, the cook fetched up our kag of good old rum;
 The shark he had his drink poured first, an' all of us then took
 some.
 Still actin' by orders, the cook he took an' he picked them stitches
 out,
 An' we all turned to, an' we lent a hand, though of course we had
 some doubt
 As to how he'd worn it an' how 'twas hitched, an' whuther 'twas
 tight or slack,
 But as best we could—as we understood—we put that liver back.
 Then we sewed him up, an' we shook his fin an' we giv' him another
 drink;
 We h'isted him over the rail ag'in an' he giv' us a partin' wink.
 Then he swum away, an' I dast to say, although he was rather sore,
 He felt that he'd started the trouble first, an' we'd done our best
 an' more.
 'Cause a dozen times 'fore the season closed an' the mackerel skipped
 to sea,
 He herded a school an' drove 'em in, as gentlemanlike as could be.

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We'd toss him a drink an' he'd tip a wink, as sociable as ye please,
No kinder nor better-mannered shark has ever swum the seas.

Now, the moral is, if you cut a friend before that you know he's
friend,

An' after he's shown it, ye do your best his feelin's to nicely mend,
He'll meet ye square, an' he'll call you quits, providin' he's got a
spark

Of proper feelin'—at least our crew can vouch this for a shark.

CHAPTER XXI

THE UNNATURAL FATE OF THE JELLYFISH



HERE are those who like a dash of imagination in their records of the forests and the seas, and to whom that which cannot possibly be true appeals with more force than the prosaic actual. We wish to please all tastes, and to such as these we may commend the following tale, older than any other of those of the "Haunted Silences," and authenticated by the best of affidavits. By such affidavits, for example, we are able to prove on unquestionable authority, of clergymen, naturalists and real estate agents, that a jellyfish, seen off Newport in 1907, had not a bone in his body, that a monkey taken on the Monkey Island in Matsushima Bay in 1905 had his liver in, and that the only remark of the crow on the turret was caw-caw. Furthermore, an antiquarian reports that an ancient scepter or truncheon supposed to belong to a King of Yvetôt had one side pressed or indented, as though it had been used in pounding beef.

Here is the story:

It was the King of the Weirds, and he sat in a tower of his castle by the sea. And all around him on the walls the Weirds stood and wept, and on the tallest turret the Black Crow sat and said, "Caw, caw, caw!" The castle stood by the shore of the sea, and the King looked far over the waves to the Monkey's Island. And the Prince of the Weirds, the King's little boy, lay in his trundle-bed by the throne, and moaned and groaned persistently, for the Prince was very

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sick; he had eaten the green fruit from the jujube tree, and there was nothing could save him but a monkey's liver. So the Weirds all wept as they stood on the walls of the castle, and the Black Crow on the turret said, "Caw, caw." And the Prince could not play with his toys, nor trundle his hoop in the Castle garden, and there was no joy throughout the kingdom.

So the King pounded on the floor with his scepter, and called, "What ho!" Then he sent to the shore for his favorite Jellyfish, who ran on errands for him in the sea, just as the Black Crow ran on errands in the air. The Jellyfish came up from the water and touched his hat to the King, and said: "What does your Majesty command?" Now in these days the Jellyfish was a sure-enough fish. It had head and tail, and fins enough to swim with, and a long groove down its back where it could fold them up when it wanted to walk on the beach. For the Jellyfish had legs, too, and could walk, and he wore a hat with a feather, and carried a sword by his side, and was a creature of general utility, and the Prince and the Jellyfish were chums together as they dug holes in the sand or chased the crabs into the surf.

So the Jellyfish came walking up the stairs, with his sword by his side, and his fins nicely folded in the sheath down his back. And the King said, "What ho! What ho, my man! You must swim away across the sea to the Monkey's Island, and bring me a monkey with his liver in."

And the Jellyfish touched his hat, and shook out his fins, and ran down the stairs to the sea, and swam away, without a word, just as the King had told him. And the Weirds all watched him while he swam, and the tears ran down their faces, and the Black Crow on the turret said, "Caw, caw!"

When the Jellyfish came to the Monkey's Island, he saw a Monkey sitting on the limb of a tree. The Monkey looked pleased, for he had never seen a Jellyfish before, and he was tired of living with the Monkey people and seeing

nobody but monkeys, monkeys, monkeys everywhere, just like a great menagerie. So the Jellyfish said, "What ho, O Monkey! come out on the water for a sail with me. Come to the land of the Weirds with me, and I will show you the King and the throne and the Castle and the little Prince of the Weirds, and the Crow that says 'Caw' on the turret."

"All right," said the Monkey. So he climbed down the tree in two jumps, and took the Jellyfish by the hand, for Jellyfishes had arms and hands in those days, as well as legs and fins and bones and everything that you or I have, or any other king's son.

And the Jellyfish told the Monkey to get on his back. Then he spread his fins and leaped into the sea. Away they went, over the waves till they came to the shore by the King's castle. And all the Weirds stood up and looked at them, and the Crow said, "Caw, caw! Beware, O Monkey, with your liver in." So the Jellyfish shook off the salt water, and dusted the sand from his feet, and folded his wet fins. Then he took the Monkey by the arm, and arm in arm they went up the marble stairs to the throne of the King of the Weirds. "What ho!" said the King, "and have you brought me the Monkey with his liver in?"

Then he called "What ho!" to the Chief Cook to come in and carve the Monkey. So the Cook came in and sharpened his knife on a stone.

But the Monkey was scared, and he ran up the wall and sat on the top of the throne, chattering away to himself and shivering as if he were cold.

And the King could not understand him, and said, "What ho, O Monkey! what is this you say?"

And the Monkey got his voice again, for in those days all the animals could talk. That was before there were so many little children to do the talking for all, till the animals cannot get a word in edgewise. And the Monkey said, "Woe is me! I am so sorry, O great King! My liver is so heavy that I always leave it at home when I go visiting.

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It is over on the Monkey's Island hanging on the limb of the tree where I have my home. Oh, if your messenger had only told me, then I would have brought it along, and his highness, the Prince, would have been well again." Then the Monkey said, "Woe is me!" and the Weirds all wept and the Crow said, "Caw, caw!"

And the King said, "What ho, O Jellyfish! take the Monkey home and leave him there, but bring his liver back with you."

So away they swam again to the Monkey's Island, and the Monkey clung tight to the Jellyfish and shivered as he chattered to himself in a language the Jellyfish could not understand. When they came to the shore, the Monkey ran swiftly up the tree and climbed out on the long branch. "Woe is me!" he called to the Jellyfish, "I am undone and all is lost. My liver is gone. Some one has stolen it. And what will the poor Prince do?" Then he chattered away to himself, and softly opened and closed one eye to let a tear fall from it, and it dropped down on the nose of the Jellyfish.

And the Monkey chattered again, and when the other Monkeys heard him they all ran away, and each one took his liver with him, so the Jellyfish could not find a liver anywhere.

In the Castle of the Weirds sat the King and gnashed his teeth, and saying: "What ho, Adzooks!" and other things that only Kings and Princes say. At last he saw the Jellyfish swimming back alone. And the Weirds all wept again, and the sick Prince groaned, and the Black Crow said, "Caw, caw! Beware of the Monkey, O King, beware!"

When the Jellyfish came up from the beach and entered the Castle gate, the King went out to meet him. He threw down his scepter as he stepped off from the throne. It hit the Jellyfish on the nose and made a dent in his fine gold. Then the King picked up his umbrella, which was standing in the hall, and he pounded the Jellyfish with it until he

broke every bone in his body. And at last, when the King had exhausted his rage, the Jellyfish had no bones, nor any fins, nor any tail, nor any legs, nor anything else in him but just jelly.

Ever since then, all the Jellyfishes there are in all the seas have been just as this one was when the King had finished with him. They all swim about in the water without a bone in their bodies, without any fins, or any tail, or any legs. Because their legs are all pounded to jelly, they never come out on the land any more, but swim around in the sea. And they open and shut themselves as they lie in the water just like an umbrella, because it was an umbrella that the great King used, and the spirit of reverence never dies out in a faithful servitor.

CHAPTER XXII

THE SEA HORSE AND HIS SEA PONIES



IF all fishes none is more strange than the sea horse. Its head is shaped like the head of a horse, for all the world like that of a chess-knight. Its body is fantastic, armed with a coat of mail, with little fins, and the tail twisted about like the tail of a thousand-legged stork.

Some sea horses fasten themselves by their tails to floating seaweeds, and so are borne for great distances across the seas. Some stay at home and cling to sea-wrack, and other weeds that grow in the bay, and there are some about whose habits we know almost nothing at all. They belong to tropical seas and are borne northward, only by warm currents. The original home of the sea horse is in the Sargasso Sea, in the Atlantic, but they are plenty in the Mediterranean, and in the West Indies, and all along the coast of Japan.

The little kinds live in the bays, and I shall tell the story of one of these, from Pensacola, as I once told it to a group of children, and as I once printed it in a children's book:

He was a little bit of a sea horse, and his name was Hippocampus. He was not more than an inch long, and he had a red stripe on the fin on his back, and his head was made of bone, and it had a shape just like a horse's head, but he ran out to a point at his tail, and his head and his tail were all covered with bone. He lived in the Grand Lagoon at Pensacola in Florida, where the water is shallow and warm and there are lots of seaweeds. So he wound his tail around

a stem of sea-wrack and hung with his head down, waiting to see what would happen next, and then he saw another little sea horse hanging on another seaweed. And the other sea horse put out a lot of little eggs, and the little eggs all lay on the bottom of the sea at the foot of the seaweed. So Hippocampus crawled down from the seaweed where he was and gathered up all those little eggs, and down on the underside of his tail where the skin is soft, he made a long slit for a pocket, then he stuffed all the eggs into this pocket, and fastened it together, and stuck it with some slime. So he had all the other sea horse's eggs in his own pocket.

Then he went up on the sea-wrack again, and twisted his tail around it, and hung there with his head down, to see what would happen next. The sun shone down on him, and by and by the little eggs began to hatch out, and each one of the little eggs was a little sea pony, shaped just like a sea horse. And when he hung there with his head down he could feel all the little sea ponies squirming inside his pocket, and by and by they squirmed so much that they pushed the pocket open, and then every one crawled out and got away from him, and he couldn't get them back, and so he went along with them and watched them to see that nothing should hurt them. And by and by they hung themselves all up on the seaweeds, and they are hanging there yet. And so he crawled back to his own piece of sea-wrack, and twisted his tail around it again, and waited to see what would happen next. And what happened next was just the same thing over again.

CHAPTER XXIII

THE APACHES OF THE SEA



SWIFTEST of all fishes, wandering far and wide, and hunting in packs, the mackerel tribe are the Apaches of the sea. You may call them freebooters or Bedouins, or any other name which will indicate strength, speed, voracity and independence. All of them are shaped like a clipper ship. All of them have small sleek scales, and fins that lie flat in a groove. All of them have slim tails, worked by strong red muscles, and ending in a broad, forked, fan-shaped caudal fin, which is their means of propulsion in the water.

The true mackerel is one of the smallest of the tribe, but in the Atlantic, on both shores, it exists in countless millions, and from the economic point of view outweighs all the rest. The chub mackerel, a little smaller, much less valuable, but looking very much like the true mackerel, is found in all warm seas. Curiously enough, it was first named from a Japanese specimen before ever it was noticed as a separate fish. This fish is common in California, Hawaii and Japan, as well as in the West Indies, up the Gulf Stream and in Europe.

The frigate mackerel ranges widely in schools through the open sea, and sometimes may be found anywhere where the water is not too cold. Larger than these are the striped bonitos or skipjacks, in the Atlantic and in the Pacific. Still larger are the two species of oceanic bonito, ranging everywhere—the striped and the spotted and mottled forms. All of these are game fishes, with red and oily meat, some coarser and some finer.

Still bigger are the albacores, chunky mackerels, with the pectoral fin very long, like a ribbon. Commonest of these is the long-finned tuna, which is the albacore of the California coast. The yellowfin tuna is a Japanese species which is taken at Hawaii and at intervals at Santa Catalina, where Dr. Holder was first to discover it. In this species the finlets on the back are all lemon-yellow. Finally, king of all mackerels, is the great leaping tuna or tunny, all these names from the same Greek word as our ton. A ton of fish, and to the angler a ton of the greatest sport. The tuna is found in Southern Europe, occasionally on our Atlantic coast, and persistently about Santa Catalina Island where the Tuna Club has its center of operations.

Other tunnies exist in other regions. Australia has a splendid species, but the tuna of California stands at the head, the swiftest and strongest of all creatures sought by the angler.

The long-finned tuna or albacore is short and plump, like a fat pig, and distinguished from all others by its long and slender pectoral fins, which extend backward along its sides like stiff ribbons. It reaches a length of two or three feet, and a weight of from twelve to seventy pounds. Its flesh is very red, like the flesh of beef, and very oily, so that, while its flavor is fairly agreeable, one does not care to eat much of it.

It comes to the Southern California islands in great schools in the spring. Where it comes from no one knows, nor do we know where it breeds. The young are never seen in California, all that we know being full grown. It comes at the same time with flying fishes, and perhaps to feed on them, for it is an eager fish and voracious. Its teeth are small, but its mouth opens wide, and in its maw is found a variety of other fishes which it has swallowed.

I once opened an albacore's stomach at Santa Barbara. Inside of it I found a whole hake, a fish which lives at a considerable depth. Inside the hake, which was fresh, I

found another whole fish, a kind of lantern-fish, with luminous spots, fitted to live in the ocean abysses. This little fish, which I called *Sudis ringens*, has never been seen before nor since, and it is not often that any fish gets swallowed twice before it is digested.

The albacore takes the trolling line much as its larger brother the tuna does. It is taken by hundreds of anglers and fishermen about these islands, especially in the months of June, July, August, up to December, and at Santa Catalina is taken almost every month in the year, in greater or less numbers. It is widely distributed through the warm seas. It is common in the Mediterranean, and it certainly breeds there. It goes out into the open sea, but rarely reaches the West Indies. It visits many of the islands of Polynesia, but we are not sure that all the albacores recorded from these regions are the same in kind as ours of California.

The name albacore is said to be from the Arabic and to mean "the pig." If we divide it al bacore, we shall see that it has nothing to do with the Latin word "albus," white. It should not, therefore, be written "albicore." The name "alalonga" means long-winged, and its meaning is obvious. Sometimes the name albacore is given to other big mackerel-like fishes, as the tunny (tuna), or the bonito, but this long-finned species is the one to which the name really belongs.

One of the very oldest of all the old families, flourishing in the seas of the ancient Silurian times, before there were land animals or true fishes or men, is the tribe of chimæras. Their teeth and bones we find in the rocks with the teeth of the oldest sharks, and we know that there was a time when the chimæra was the highest animal that lived, the prince of all the powers of the sea. Now he is fallen from his high estate. The tribe is almost extinct, and the few that remain skulk in the deep seas, or the cold currents, hugging the bottom as if to shun notice. They are freakish

in looks, as the name *chimæra* would indicate, for a *chimæra* was a kind of goat-headed spook with which the Greeks used to frighten their children. They are soft of body and smooth of skin, with gristle for bone. The flesh is coarse and ill-flavored, and no fisherman seeks them, unless it be for the oil that fills their voluminous livers.

There is a big spine in the dorsal fin. The teeth are simply flat pieces of bone, the fins are large, the tail long and slim, for which reason some fishermen call them ratfishes, and the rat-like gnawing teeth bear out the same idea. The male has a curious hook on his head, ending in a little pad of enameled teeth, and no one can guess what useful purpose it serves. We only know that *chimæras* have always had them.

There are *chimæras* in every cold sea, but they are nowhere so common as in California. This is because our *chimæra* in the cold Japan current lives in shallower water than any other, and hence is more easily caught. Our species, *Chimæra colliei*, is found in the bays everywhere, from Sitka on the north down to Santa Catalina Island, where specimens are often seen in the aquarium. Whenever a rock is blown out by dynamite in any harbor, dozens of *chimæras* are killed and brought to the surface, to be sent as curiosities to the university museums. It is especially common in Puget Sound and in Monterey Bay, where it was first found sixty years ago, by Mr. Collie, the naturalist on board of Captain Beechey's ship, the "Blossom."

Our *chimæra* is iron-gray in color, with large white spots. It lays very large eggs, in long white leathery cases, and in these cases, safe from the meddling of inquisitive crabs and sculpins, the young *chimæra* is hatched. As he grows up, strange, solitary and fantastic, he deserves our respect, for like ourselves, he has a very long lineage, and there has never been a time within the last ten million years when the *chimæra* family was not among the first families of the sea, just as ours ranks with the first of the land.

Minnows and chubs are feeble folk, scorned by the angler and devoured by all other fishes. But all rules fail in California, and the chubs in our rivers reach a mighty size. The one called squawfish has the long slim body and slim jaws of a pike; although like other minnows, it is large enough to be greedy and to take the hook with spirit. In the Sacramento the common species reaches a length of three feet, and the fishermen often sell them as "Sacramento pike." In the Columbia is another species, the Oregon squawfish. As the name squawfish is applied to nothing else, it is the best name to use for these giants of the minnow tribe. Like other minnows, the squawfish has smooth scales, soft white flesh, and a pair of jaws in its throat behind the gills. These are called pharyngeals, and each is armed with two rows of long sharp hooked teeth. In the first row are five large teeth; in the second, two smaller ones, each shaped like a plow cutter. The flesh is watery, without much flavor, and is full of small bones.

In the Colorado River is a still larger species of squawfish, called at Yuma the "Colorado salmon." It is no salmon, of course, but grows to be quite as large, sometimes reaching five or six feet in length. It is the best fish in the river, for all the rest, hard-heads, razor-backs, split tails, etc., are very dry and bony.

The squawfish is found in the deep places of the river through the Grand Cañon of the Colorado.

The storm-fishes are little fragile fishes, jet-black in color, who live in the depths of the sea, carrying their own lanterns to see their way about. They swim in the open oceans, often in schools, going down deep in quiet weather, keeping away from the light, but coming to the surface in the night or during storms. In stormy nights they often rise to the crest of the waves, and are then sometimes blown on the decks of ships.

But in quiet days one would look in vain for them any-

where, and the only possible way of catching one would be through a tow-net dragged deep in the water.

There are many species of these fishes found in all seas. They are all small, most of them under three inches. They feed on little animals, crustaceans mostly, floating in the sea. They are all jet-black, for the depths of the sea are colored like ink. Their large scales have a silvery luster, or rather the luster of steel, and on their head and body are rows of round shining spots or lanterns, with which they lighten up the depths about them. Some have the whole nose luminous, like the headlight of an engine, but the commonest California species lacks this advantage.

Numerous species are found in the depths off California, and have been brought up by the "Albatross." A few were taken by Dr. Eigenmann off the coast of San Diego. The first specimen of this species was found by the present writer in 1880 in the stomach of an albacore at Santa Barbara. Since then, a few others have been found. These little fishes are always valued by collectors, because they are rare, and not often well preserved, on account of their fragility of body. Fishes of the deep seas are always weak, because they are held together by the great pressure of the waters. When raised above their depths, their flesh is easily torn, and their scales are likely to fall off.

The storm-fishes are related to the salmon and trout, remotely, it is true, but the likeness is shown in the presence of the adipose fin, and in the general arrangement of the bones and fins.

Sailing about slowly in the open sea, now here, now there, on one coast to-day, on another next month, are the few schools of the fish called opah. Shaped like the full moon, with high fins and short tail, its naked skin a rich brocade of violet and crimson, with spots of gold, the moonfish is one which catches the eye of all who happen to see it. It is one of the largest of true fishes, reaching a weight of four hundred pounds, and its tender pink flesh, filled with deli-

cately flavored oil, makes it one of the very best of food fishes. A single fish would be a good month's wages, yet no fisherman pursues it in any sea, for he would never know where to look for it. It has been taken almost everywhere. It is recorded from England, France, Italy, Maine, Nova Scotia, Massachusetts, Cuba, Honolulu and Japan. In California it has been taken at San Pedro Point, at Monterey and at Santa Catalina.

In Hawaii, they call it Loukipala. In England it is the opah, and often it carries a series of other names, moonfish, glance-fish and Jerusalem haddock. The Spaniards call it mariposa, or butterfly, and the Italian fishermen at San Francisco call it San Pedro fish, because they once found a little school of them off San Pedro Point, between San Francisco and Half Moon Bay.

But whatever its name, it is one of the noblest of fish, rich in flesh, beautiful in color, dignified in habits.

It constitutes a family all by itself, of a single species. It is remotely, very remotely, related to the mackerels, and its lineage is very ancient, for there is a kind of opah, named *Dorypterus*, found in the rocks of Devonian times, one of the very earliest of all the bony fish. *Dorypterus* is even shorter and deeper than *Lampris*, with a higher fin and a still more lugubrious expression at the down-turned angles of its mouth. Even in Devonian times, such inhabitants as there were were often despondent as to the future of society.

Most characteristic of all the shore fishes of California are the various species called surf-fish, constituting the family of viviparous perch. Of these fishes there are twenty species, eighteen in California and two in Japan. They are short broad fishes shaped like a sunfish, but the spines weaker, and the anal fin with many more rays. The largest reach a length of eighteen inches, the smallest about five. They feed on small animals, and some of them on plants. Their teeth are small, their mouths narrow. Their scales are large and mostly silvery. Most of the species are

gray or olive with shining sides, but a few are striped with red and blue, and some have blue or dark red mottling. For the most part, they live in the surf along sandy shores. One species goes into deep water, and one is found in fresh-water streams around San Francisco Bay.

The flesh of all is pale, rather watery, and without much flavor. The one most remarkable trait is shared by all. They hatch the eggs in the body and the young are brought forth alive. When born, they are about two inches long, as thin as wafers, with the fins very high like sails. There are a dozen or more born at a time—tail first—and they are born in quiet waters just outside the surf in the spring.

The commonest large species was named by Professor Agassiz for Dr. A. C. Jackson, who first discovered this extraordinary habit. One of the smaller species swarms about every wharf and is caught by every boy who drops a hook. And the others are all familiar to the idlers along shore who fish from every wharf.

There are other fishes that bring forth their young alive. More than half the species of shark hatch the eggs within the body, and the young when born are quite able to take care of themselves. The great body of the red and green fishes known on the Pacific Coast as rock fish or rock cod hatch the young within the body, but these are born in multitudes when less than a third of an inch long.

Of the multitude of species in the tribe of top minnows, about half are viviparous, the body of the little mother fish being crowded with the relatively large young. These fishes are especially numerous in streams and estuaries of the warmer parts of America. One of them is less than an inch long when full grown, and long held the record as the smallest known vertebrate.

These killifishes, or top minnows, are now attracting interest from their fondness for mosquito larvæ. The government of Hawaii has lately brought three species of them from Galveston to Honolulu, where they are still engaged

right and left in the extermination of mosquitoes. There are many ways of killing off this worst of pests, but to fill the brooks and bayous with pretty little fishes is one of the best ways. Three species have been brought by Alvin Seale to Hawaii.

In Australia, a pretty little fish called the "blue-eye," a kind of silverside, serves the same useful purpose and to this end it has been lately imported to the malarial brooks of Italy.

CHAPTER XXIV

SOME OCEAN GIANTS

"I wonder why they have three classes of tickets in an excursion fishing-boat," queried the tenderfoot, who had a third-class ticket. Just then the anchor went down and the captain sang out: "First-class passengers fish, second-class bait hooks, third-class clean fish."—NEW YORK BAY ANCIENT STORY.



VERY warm sea has its jewfish, of one kind or another. All of them are great, greedy, slow-moving, blundering fellows, bass-like in form, fins and scales, and all of them reach an immense size for a bass, anywhere from one hundred to five hundred pounds in weight. Why these huge creatures are called jewfishes no one knows. It may be from their aquiline noses, or it may be that they are chosen people among fishes. This only is certain, that the name is used for the giant bass in every country where the English language is spoken.

All of the jewfishes have a great, wide head, a large mouth, with small teeth, small, firm, rough scales, and spines in the fins much like those of a bass. All live on rocky shores, where the water is not too cold, and usually only one kind is found in any one region.

The California jewfish is common from Point Concepcion to Cerros Island, principally about rocky offshore banks, outside the kelp. It spawns about the Southern California islands, but young ones are seldom caught. They take the hook, and so far as I know, they have no special tricks about it, but are a gritty heavy weight to draw in. The largest



BLACK SEA BASS.

Taken by T. S. Manning at Santa Catalina Island, California, with
rod and reel, in two hours play.

one, of which I have the record, taken at Avalon, weighed four hundred or more pounds. It does not matter who took it. Those who would boast of the big fish they catch must do so outside of these voracious pages.

The jewfish of California, called by anglers black sea-bass, is olive-green in color, dark above but nearly plain. Its flesh is white, firm and well flavored, and it has a good repute as a market fish.

In Japan there are two huge jewfishes. The one known as the Ishinagi, or stone-bass, is very much like the California fish in appearance and habits.

The other, called the Abura bodzu, or "fat priest," is a big, sleek giant, said to grow very fat. It is, however, seldom taken, only three or four specimens being known to me. It is really not a bass, but an ally of the rock cod. In Formosa and southward is a jewfish still more huge, with a very broad head. This one is said to reach a length sometimes of twelve feet, but the largest I have seen is not over a foot long. In Australia are other jewfishes, mighty masses of fish flesh, one of them being called *Glaucosoma hebraicum*, a Hebrew as well as a Jew.

In the West Indies, the great spotted guasa, or itaiara, is called jewfish by the English fishermen, as is also the great black grouper. Grouper is a corruption of the Portuguese name, garrupa, applied to all large sea-bass, and the biggest of the garrupas are the jewfish. The guasa is found on the Pacific coast of Mexico, as well as in the West Indies. From other monsters of its kind, it may be known by the round black spots as large as peas which cover its body. Another jewfish is known in England as wreckfish, or stone-bass. This is much like the California jewfish. It is called in Spanish cherna, or in Italian cerna. The great grouper of the Mediterranean is sometimes counted with the jewfishes. It is the merou of the French fishermen, the mero or cherna of the Spanish. All these names are much mixed up in the West Indies as bass or perch are with us, but if

ever you catch a bass bigger than you are you can be pretty safe in calling it a jewfish.

Hugest of all fishes, a great clumsy mass of flesh almost as inert as a sawlog, and quite as harmless to other fishes, is the great basking shark. It reaches a length of sixty feet and a weight that has to be measured in tons. As it lies on the beach, where a successful whaler has landed it, its dorsal fin rises higher than a man's head. It takes a strong man to lift its lower jaw alone, and one of its gill arches is a burden for a good-sized boy.

The basking shark has its home in the north in either ocean. In the Pacific, these fishes come south in the summer, usually in pairs, male and female together, lumbering and blundering along, swimming at the surface of the water and feeding on whatever little things may come into their wide-open mouths. Sometimes a little school of half a dozen may be found together, for they have at least brains enough to love company, and do not go hunting alone like the predatory sharks. For these sharks never hunt a prey large enough to know of their existence. Their teeth are blunt and very small, covering their jaws in hundreds, very different from the few knife-like or lancet-like teeth of the sharks that run down salmon, mackerel or men.

On our Pacific coast the basking shark is most often seen off Monterey. The trend of the coast is such that they come near the shore at the Point of Pines, and now and then one used to be taken at Verissimos Portuguese whaling station in Monterey, and several have been taken off Santa Catalina. They are easily harpooned, having neither speed nor sense, and once beached, the great liver is taken out and tried for oil, counting for as much as a small whale. In 1880 the writer saw one captured at Monterey, at which time the British Museum offered \$1,000 for the skin of one in condition for mounting. Afterward the Museum secured one from the coast of Norway, where it sometimes comes. It was on the Norway coast where the basking shark first

came to the notice of science. It was in Norway when, about 1770, Gunner, Bishop of Throndjem, wrote the first description of it and named it *Squalus maximus*—the great shark.

In 1894, a specimen was taken at Santa Barbara, skinned and mounted. This one, after a season at the Midwinter Fair, went to Stanford University, where its huge bulk was long on exhibition in the basement of the museum, there being no other room available which was large enough to hold it. At last we had to throw it away for want of space; there was no one to whom we could give it. It was big enough to require two flat cars to move it.

In 1895 three specimens were obtained at Monterey by Mr. John M. Stowell, a Stanford student, who sent them to the three museums of Copenhagen, Berlin and Vienna. By this time the price had fallen, and at \$200 each there was little profit, after spending a week in skinning the fish, cutting the skin in sections and preserving the sections in half a dozen hogsheads for shipment to Europe. Another museum in Europe has an order out for one, but the shark to supply it has not yet appeared.

The basking shark, like most, but not all other sharks, brings forth its young alive, the great eggs being hatched within the body. This great fish is usually called the basking shark from its sluggish habits. The name elephant shark is also sometimes used, and the Japanese call it the old woman shark, because it seems to have lost its teeth.

The scientific name of *Cetorhinus*, giving by Blainville in 1817, means whale shark, because of all the sharks it has most nearly the looks and behavior of the whale. Next to the very small teeth, the best distinctive mark of the basking shark is the very large gill opening, which almost seems to sever its head from its body. Only one species of basking shark is known. It constitutes by itself a single family. It has been found on the shores of England, Scotland, Ire-

land, Norway, France, New England, Canada, California and Japan. There is another huge shark of this sort, in the warm seas, known as *Rhineodon*, which reaches 60 or 70 feet in length.

Next in size to the basking shark, comes the great white shark, or man-eater, boldest and baddest of all the fishes of the sea.

It is much like other sharks in appearance. Its teeth are triangular, broad and saw-edged. It is found in all warm seas, and it will swallow a man as cheerfully as an ordinary shark would devour a rat. According to Linnæus, and to the early theologians generally, from whom Linnæus got his information, this was the creature which really swallowed Jonah, and it might have done it, although the escape of Jonah afterwards might have been puzzling. I have caught but one of these fishes. It was about 32 feet long, and it was taken off Soquel in Monterey Bay in 1880. It had a sea lion pup whole in its stomach. The species reaches a length of about 35 feet. It does not often stay along the shore, the man-eaters of the bays being the cub shark, and its kindred, beasts of half the length of the great white shark.

The man-eater of 36 feet long has teeth about an inch long. In Eocene and Miocene times, sharks of this type were very abundant, perhaps 120 feet long. At least, they had very big teeth.

Speaking of big fish, there is one other worth a moment's notice, the huge manta, or sea-devil, of the tropical seas. This is a huge sting ray without much of a sting, the body as broad as long, and with two little fins at the end of his head standing up like the horns of Mephistopheles in the opera, or like wings on a woman's hat. This beast grows to the width of twenty feet or more, and its power is tremendous. If you harpoon it, it will tow your schooner for miles, or run away with it altogether. It feeds on clams and the like, but the pearl-divers believe that it eats men,



TUNA LEAPING OVER MR. BERRY'S BOAT.

See page 205.

first folding them in its huge wings, then swallowing them whole, the horns on the top of its head sticking up all the while, in a devilish, fishy sort of glee. Fifty years ago the fashionable sport among planters on the Carolina coast was the capture of these dangerous fishes.

Not many years ago the horse mackerel, as the tuna is called on the Atlantic Coast, was common on the Massachusetts coast. They were harpooned, and one day one hundred, averaging one thousand pounds each, were taken in Gloucester harbor amid the greatest excitement, owing to their remarkable leaps over dories. In Southern California waters a friend of the writer, a Mr. Berry of Pasadena, had the unusual experience of looking up, and seeing a one- or two-hundred-pound tuna, or horse mackerel, going over his head.

CHAPTER XXV

AN UMBRELLA OF FISHES



ABOUT six miles off the southeast coast of the island of Santa Catalina, California, is a region, of happy memory to many an angler, called by the boatmen the "doldrums," as it is an offshore lee, lying between the winds; hence is nearly always calm. Sometimes the prevailing west wind comes around the north end and reaches it; again, vagrant zephyrs come down the San Clemente channel and ripple its surface; but, as a rule, it is a region of soft winds and calms, only a long imperceptible ground swell telling of storms far out at sea.

As these lines are written, I am just in from the "doldrums"; having drifted in it, steamed across it all day trolling for swordfish and tuna, over seas of sapphire, with the best of angling company. We sailed from seven in the morning until five in the afternoon. It was in latitude 32° , but the winds, when there were any, were cool and pleasant, and more than once we exchanged views to the effect that if there was another fishing ground in the world as delightful and comfortable as this, we did not know it. Care, responsibility, the worries and happenings of life, were left aside. There was not even a cloud to invade the "doldrums," nor was there what we were in search of—tuna or swordfish; but there was the unexpected always happening on the angler's horizon.

The ocean here was a blue of divine hue, deep, pure, pulsating, as though made up of infinitesimal dust atoms of diamonds. Over the surface at long intervals were patches

of kelp—the *Nereocystis* and others, beaten from some distant bank, floating gardens of the sea, and so closely interwoven, that they formed rafts upon which floated the gulls, their white plumage being visible a long distance.

These patches of weed constitute living umbrellas for many fishes, large and small, and our fishing on this day of days was made up of excursions from one island to another; now lying by one, anchoring to it by hauling the weed on board, and as we drifted, casting into the deep-blue channel for the game yellowtail, which coursed about affording sport of a quality rarely seen elsewhere.

One of these weed islands would have afforded a zoölogist study for a long time, and a volume could have been written on the strange animals living there; and that they formed umbrellas for the fishes was more than a fanciful suggestion. Under one I saw half a dozen sunfishes, which swam lazily off at our approach, then came back; and under all were schools of little fishes of various kinds, which the boatmen called "offshore minnows," which were, doubtless, the young of a variety of mackerel-like fishes, and others, which had followed the weed when it was broken from its anchorage. When we first saw them they were distributed over an area twenty feet square; but at the slightest alarm they would dash back to cover and hide under the richly tinted protective leaves.

An interesting feature of this assemblage was that many of the large fishes had taken on the exact tint of the great kelp. As I looked down, or under it from the launch, these fishes, hugging the weed so closely, could hardly be distinguished from it; the result being a remarkably effective protective resemblance, as when one of these fishes dashed into the weed, it disappeared as though some magic wand had touched it, and changed it into a bit of seaweed. I counted four or five distinct species of the smaller fishes; and preying on them were the yellowtails, which swam lazily around below, their green-tinted backs looking not un-

like the weed. I could see possibly sixty feet down, and as I looked, the blue of the ocean was intensified, and by tearing the weed apart I made the most marvelous mosaic imaginable: sapphires of all sizes and shapes, represented by the blue of the ocean, set in various forms—a fascinating lattice, through which I could see fairy-like jellyfishes, forms of great delicacy and grace, all floating beneath this living umbrella.

Hardly had our baited hooks descended ten feet before we had hooked yellowtails ranging from twenty to twenty-five pounds. Every move of the fish could be watched, from the time it took the bait until twenty minutes later, when it came to the gaff. They appreciated the importance of the umbrella, as in every instance they attempted to run for it, winding in and out, hoping to break the line; and to see so large and beautiful a fish, not five feet below, moving about against a blue background of great brilliancy, was to see one of the sights of one's life.

The next patch of weed that we stopped near was a point of attraction to numerous long-finned tunas, and by a system of chumming, we collected many about the launches weighing from fifteen to thirty pounds. Their broad backs were the color of chocolate; and I noticed that they carried the long side fins at an angle of 45° , but, apparently, did not use them in swimming, though of this I was not certain. With them were bonitos (skipjacks), and occasionally out of the deep blue depths would come the yellowfin tuna; a splendid game fish which has been added to the Santa Catalina list of game fishes during the past three years.

From one to another of these floating islands we passed, and late in the afternoon found one eight miles offshore, in the very heart of the "doldrums." As we ran quietly up, several large fishes, which we supposed were yellowtails, waved their fins and disappeared. As we moved on, and the bait passed the island, z-e-e-e! broke on the air, the reel screamed, the lithe split bamboo bent and swayed almost to

the danger point, and what we thought was a yellowtail dashed along the surface.

It was my companion's rod, so I stood up to watch his skilful play and the gallant fight of the fish. Leaning over I presently saw a blaze of brilliant purple with flashes of silver, and announced that the game was not a yellowtail, but an albacore. But as I looked, the purple faded, and a marvelous green took its place; a green which gleamed, sparkled and scintillated, faded into purple, became green again, a weird bronze-green, which grew lighter and lighter as the fish came up on the reel, and we saw that it was the dolphin—one of the most gorgeous of all the fishes, famed for its brilliant change of color.

A shoal of dolphins tumbling in wild glee,
Glowed with such orient tints, they might have been
The rainbow's offspring, where it met the ocean.

—MONTGOMERY.

This was a rare catch even in these prolific waters, and as soon as its true nature was seen, it was played carefully and brought to gaff; a long, very thin, ribbon-like fish, with a bowed head, a long dorsal fin, and a tail like that of a swordfish. But who can describe its colors, its rapid changes from vestment to vestment? An animated rainbow? There is but one to which to compare it, and that, the interior of the most gorgeous abalone shell, upon which the sun's rays play with countless change and scintillation. We watched the fish some time, and followed it through all of its changes. As it died it was a bronze-greenish white, fading into purple; its long dorsal a vivid peacock-blue on the upper portion; the base greenish-yellow, dotted with oval purple and old rose spots. The dark eye was surrounded with a yellow band; the lower jaws and fins were dashed with purple—a catch to dream of.

Some years ago I took a dolphin in a patch of sargassum, off Florida, and I have hooked and speared them from the

dolphin striker of a ship; but their changes were from purple to dark green. This splendid creature has evidently joined ranks with the Santa Catalina galaxy of game fishes, and taken its place as one of the finest of this prolific region. Several have been taken this season, and nearly all leaped with the vivacity of a tarpon.

In all waters the idea of a sea umbrella is carried out, fishes congregating beneath floating circular patches of weed. This is particularly true of the Gulf of Mexico. Not only is the weed a protection to little fishes of the mackerel tribe, but others attach themselves to all the large jellyfishes and even live up beneath the death-dealing tentacles of the physalia.

I never lifted a Portuguese man-of-war in the Gulf of Mexico that did not afford protection to countless little fishes, which mimicked the beautiful parts of the floating animal. The commonest of these species—the man-of-war fish—so closely resembled the death-dealing tentacles that it was almost impossible to see them. Perhaps if these fishes could be transferred to the floating kelp gardens of the Santa Catalina channel, they would become green. Experiments in different aquariums tend to show that the eye is the medium through which fishes change their color. The change is due mainly to the degree of tension of the skin and scales. This varies with the fish's feelings. A blind fish does not change. Only a fish who can see knows how he feels in relation to external objects.

CHAPTER XXVI

THE BEACH ANGLER

"The clouds are scudding across the moon;
A misty light is on the sea."



HIGH wind had been blowing through the night along the Atlantic coast, and the roar of the waters pounding on the long yielding beach that stood between the dunes and the open sea could be distinctly heard a mile away. The clouds were drifting low, rolling in, enveloping all familiar objects. The rain fell in sheets, beating down tender plants, covering the ground with leaves, which went scurrying away before the gale.

Wishing to see the dunes and sea in a storm, I fought my way against the wind in the direction of the beach, passing a fisherman who brought news of a wreck, and finally stood face to face with the wild and pitiless sea. As far as the eye could reach, a line of foam stretched away, above which hung a nebulous smoke of spume or spray, that seemed to blend with the low-lying clouds.

The dunes, usually so soft and shifting, were now cold and sullen, packed hard by the relentless downpour, for once defying the wind. The sea was rising, and each succeeding wave threatened to overstep its bounds and flood the beach. They had a strange, weird and unnatural color, dark green shading into amber and copper tints—suggestive of a hidden light, while the foam was ghostly in its absence of color.

The roar sensibly increased as the day grew apace, and

the rocks which stood out so boldly at the point were buried in the foam, the waves making a clear breach into the fields beyond. Now a sea broke in upon the dunes, and the chiseled shapes, which had so long been the toy of the wind, melted away and were lost. The waves uncovered strange playthings: great masses of seaweed, long hawsers of kelp, which went floating away. Into every nook and corner the seas penetrated, licking up the sand, undermining the sculpturing of the wind and sweeping away the wild grasses, root and branch.

As the waves encroached upon the dunes, flocks of birds rose with wild, protesting cries, and buffeted by the fierce wind, were blown away. In many of the hollows of the dunes birds had taken shelter. A trio of crows were crouching behind a ledge of sand. I saw them, one by one, give up the struggle and desert the dunes, to disappear in the flying clouds. Two horned larks clung to a little tuft of grass which the wave had spared, apparently confused by the roar of sounds, and only rose as I passed near them, then flying to a wind-swept bank, as though fearing to trust themselves to the gale.

A number of gulls were standing in a pool in the lee, pluming their feathers, evidently just in from the sea and repairing damages, but a rushing wave soon drove them, with wild cries, away into the bay.

All day long the gale continued, the seas reluctantly giving up their prey—the shattered dunes. As the tide ebbed, it left the beach covered for miles with wreckage, while golden lines of oranges nestled, in strange contrast, among the kelp. An Italian fruiter had gone upon the sands, and all night the beach was patrolled by curious throngs, drawn to it by the crowning horror of the storm. When morning broke there were other evidences of the gale: great timbers, half buried in the sand, orange boxes high on the deserted dunes, a sailor's chest, wound in a shroud of black kelp, bits of sails, shapely yards broken, bruised and splintered; and

here, jutting from the sands that had pulled it down and half buried it, a boat of foreign make.

The gale had spent its fury; the clouds in great rounded masses shone with golden tints and hung about the distant horizon, like forces that had been called off but were yet undecided. Then the sun burst through a rift and illumined land, sea and dunes with its splendors, and all nature seemed to rejoice. The trees scintillated with drops of water, and as the soft wind rose it shook them off in brilliant showers. The sea became blue again, except near shore where the sands still colored it in tints of green and amber. From early morning the crows had been flying from the western hills, and were striking objects upon the sands. The gulls had left the harbor, and flew along the wide beach or sat upon the shining sands, watching their reflections as in a glass, and basking in the sun. Even the dunes dried quickly, and by noon in places the wrecks of the sand grass raised their mutilated points to meet the genial warmth.

Such a storm plays havoc with the birds. If in early spring during the time of migration, it drives them far inland. Many are beaten into the sea, while others, confused by the staring eye of the coast light with its blazing radiance, plunge into the halo about it, striking the glass to fall, dead and dying, at its base. These are mostly shore birds—robins, thrushes, linnets, bluebirds, and others which have been flying at night.

On such beaches after a storm one could hardly expect to find an angler, and a heavy pounding surf would seem to be the last place in which to look for fish; yet many fishes are surf-lovers, and many anglers delight to wade out, waist deep, when the beach slopes gradually, and cast far out into the surf, and drink in the spume of coming waves.

One of the finest beaches of this kind is at Amelia Island, Florida, south of the mouth of St. Mary River, and many a time I have fished from these sands, alone with the exception of my saddle horse, who bore me down from Fernan-

dina, and countless shore birds, who seemed to rise at every step.

From a sloping beach I cast one day, and after a short wait, had a strike. I was standing in water midway between knee and waist, dodging the big waves, taking some full in the face, as it was hot, then backing in to dry and evaporate. What it was I hooked I cannot be sure of, but I was confident that it was a channel bass from the flitting glimpses I had of it. It took four hundred feet of line in a splendid rush away full into the waves, and every now and then I could see something gleam on the face of a green roller. I had waded out and out until a big wave threw me and I went in on it. I gained my feet to find the line slack, and believed that I had lost the fish in my capsize; so I reeled slowly and sorrowfully in.

I had reeled about fifty feet when the line came taut with a jerk that tore away twenty feet to the buzzing of the reel, and looking up, I saw my fish dashing up the beach, its fin out of water, and directly behind it a shark gaining like a hound on the trail. If I reeled and stopped my game the shark would get it, so backing into shallow water, I ran down the sands, reeling as I could, racing with the shark and the unknown.

Every sea angler has had the experience of losing a fish by sharks. I have had a tarpon literally cut in two by a monster shark, which shot out of water with the gleaming victim in its jaws and more than once tunas have been seized as they came in. One peculiarly provoking experience occurred to a friend. He was anxious to catch a one-hundred-pound tuna to receive a certain button of the Tuna Club. He played his fish two hours and knew it was a large one, at least a one hundred and fifty-pounder. Just as he was landing it, a big hammer-head dashed up and bit the fish fairly in two; the part he saved weighed just eighty-five pounds. A fighting fish offers a strong inducement to a shark, which the angler can tell at once by the strange



HARD FIGHTING SHARK.

Taken off Coronado by Mr. Higgins of Redlands, California.

actions of the game. I soon knew that my fish was aware that the shark was on its trail; the quickening rushes, the peculiar nervous thrill which came down the line told the story.

I saw the fin of the shark lashing, cutting the water like a knife; now disappearing behind a curling, foaming wave that brought it nearer and nearer, and again saw its grim shape against the face of an amber sea.

The race was parallel to the beach, and I was constantly gaining; presently I reached the dry hard sand, the beach here being very wide at ebb tide, and stopping, I slipped the butt into my leather waist cap and reeled rapidly, forcing my catch around in a great arc of a circle towards the beach. In doing this I had lost sight of the shark, but when I waded out, knee-deep, that I might reach the leader and land my game, I saw it again. Either by chance, or by some sense of smell, the shark saw that the game was coming in and fell upon my fish not one hundred feet from me, and on the crest of a big roller, in a mass of foam, rose and literally shook the game in my face, then disappeared. I reeled as fast as I could, and for one second held it, then the rod bent and the line broke.

The shark was ten feet in length, if my eyes did not deceive me, and he rode the seas like a dory and paid no attention to them. Later I hooked and landed several six- and seven-foot sharks here in the surf, and many channel bass, and with the faith that comes to anglers as a special gift, have always thought that that shark robbed me of a sixty- or seventy-pound channel bass. Such a shark once seized the cutwater of my boat after I had played it for an hour or more, crushed the soft wood, actually pushing the boat up a foot or two, almost capsizing her, before I could beat it off. The actual situation is well shown in the accompanying colored illustration.

CHAPTER XXVII

ON THE TRAIL OF THE SAILFISH



HERE are three sorts of fishes of the swordfish kind, long, wiry, muscular fishes, swift as an arrow, and with the bones of the upper jaw grown together and produced in a long sharp sword. This sword is different from the paddle which several sorts of fishes possess, in being hard, firm and tapering almost to a point. It is, moreover, different from the flat board or saw with teeth on each side with which the sawfish and the saw shark thresh into fricassee the schools of sardines on which they prey. The sword of the swordfish is fit only for piercing, and it can be thrust through a man or a whale or the bottom of a boat. For the rest the swordfishes are gigantic mackerel, and in substance and habits they are enough like the leaping tuna.

Of the three sorts of sword-bearing mackerels, the great swordfish (*Xiphias*) itself is the one best known. Its dorsal fin is low and divided into two; its spear is longer and stronger than in the others, and the jaws are without any teeth. You may know the swordfish at all times because, having a sword, it has no ventral fins. The swordfish reaches a weight of three hundred to four hundred pounds, and while widely diffused over the world, it is mainly common off the coast of our Eastern and Middle States and in the corresponding waters of Europe. It is often taken at Santa Catalina, and occasionally also in Japan. The flesh of the swordfish is red and rich, of excellent flavor.

The spearfishes have a shorter and slenderer sword. The body is slenderer also, and the dorsal fin, as in the sword-

fish, is low, and divided into two fins. There is a long ventral fin on each side of the breast, made up of a single ray.

There are two kinds of spearfish in the Atlantic, the one, *Tetrapturus imperator*, the white spearfish, or *Aguja blanca*, rather scarce along our coasts and in the Mediterranean. This reaches a length of about seven feet, and is called by the Cubans *Aguja blanca*, white needle, for it is very sharp at the business end. The other species, *Aguja de Casta*, reaches a length of ten feet or more. It has been taken only in Cuba.

In the Pacific Ocean is a third species. It reaches a length of ten or twelve feet. It is rather common in Japan, where it is called *Mazara*, and it is taken at Santa Catalina Island every summer, and large schools have been seen made up of hundreds of these swordsmen of the sea. In California, it is called marlinespike fish. In Japan, it is much valued as food, and the writer found difficulty in being allowed to handle and measure it, for fear that the great fish would in some fashion or another become hoodooed.

The third group includes the sailfishes, much like the spearfishes but with the dorsal fin raised high into a great fan-like sail. The fin itself is blue with round black spots.

The common sailfish, called in Cuba the flying needle, reaches a length of eight feet or more, and is one of the most magnificent of fishes. The story which follows relates to the *Aguja voladora*, *Istiophorus nigricans*.

"Look! look! señor," cried my oarsman, Manuel, who was slowly and silently sculling me along the line of surf not many miles from Havana. I was standing in the bow, bareheaded and stripped to the waist, as the heat was unbearable and a dip overboard every five minutes made life more endurable.

Grains (a long spear) in hand I was on the lookout for any game which might come by. As I turned at his exclamation my eyes fell upon a strange object which re-

sembled the sail of a boy's boat, about a foot high; as I looked, it grew larger, and higher, and in less than ten seconds the big dorsal sail-like fin of the swordfish was gleaming, rippling in the sunlight like some gorgeous fabric set with turquoise, sapphire and tourmaline.

It seemed to me four or five feet in height as it cut the clear steel-like surface of the water, and possibly the peculiar ripple and tremor as the fish swam slowly along made it look larger.

My boatman sculled the dinghy gradually around, and we slowly crept up in its wake, much against his will, as I know he had no fondness for the fish, there being a story current that his companion years ago had been run through by the big Cuban spearfish. If he felt any hesitancy he did not show it; he sculled me on and on, cleverly and silently, until I was within fifteen feet of the marvelous fin, then ten, and then—then, the deluge literally. It was a lucky cast, my grains striking just back of the head, the pole being shot back as the great fish bounded into the air and in a frenzy struck to the right, and to the left, mowing down imaginary foes, then falling with a crash to leap into the air again, and again, its huge pliable silk-like fin waving, trembling, quivering in the light, like a huge bat's wing.

Four or five times the fish leaped, always rising to the very tip of its tail, dropping back again with a crash after the fashion of its kind; then it turned rapidly, so rapidly that my man pulled on his oar for his life, and the fish made a clean rush seaward, then down, taking the line, hissing and burning, through my hands one hundred, two hundred feet, and then jerking the light boat so suddenly, that had I not been clinging to the line, it would have floored me. I had a little notch or rowlock in the bow for shark-fishing, and into this I slipped the line, then lay back to keep the bow as high as possible, while the sculler steered us after the flying game.

Garfishes leaped aside in fright as we rushed on; pelicans

lumbered out of the way, and the little dinghy had the conventional bone in her teeth as she followed on in the wake of the ocean swordsman. Any one who has grained a large shark, a sawfish, a big ray, turtle or any game that is powerful enough to draw a boat rapidly, well knows the first few moments of fierce excitement, which come as the game makes its mad, initial, terrified rush. I was lying back holding the line with all my strength, the hot wind cutting my face like a blast from a furnace, and up the line came that strange, tremulous, magnetic thrill, telling of the powerful engine racing away at the opposite end.

I could hear the hard breathing of my sculler as he bent to the oar, as now the swordfish made a desperate turn, so sudden that I believed a shark had charged it, and it was necessary to haul the dinghy around at right angles. As she came, I heard various soft mellow Spanish oaths, let out like escaping steam under a protesting governor. Suddenly the big fish would sound, and go humming down to the floor of the reef, to come up and go into the air, a pulsating, scintillating mass of color and agility.

Several times it made three or four leaps together, and fell upon its side, beating the blue water into silver, and it was then that I first gained on the line and passed it aft to Manuel who laid on, and by tremendous effort hauled the dinghy fifty feet upon the flying game. All at once it stopped, so suddenly that it came like a shock.

"Off? is he off?" I cried, struggling to a sitting posture.

"No, no!" replied Manuel; "he *el toro*, he come; stand up, stand up!"

I jumped to my feet, breathless with exertion and excitement, not caring to be run through. We stood on the seats for a single moment, watching for the fish which never came, as away off to the right it went quivering into the air, then we dropped again, and not a moment too soon, as the sailfish jerked the boat around and was off, heading directly for the surf. I have read in books accounts of the marvelous

human attributes of certain animals; of one so sensitive, so proud, so high of spirit, that it committed suicide rather than be caught and tamed, and our game doubtless belonged to this class as it seemed bent on suicide, rushing on and on to certain destruction.

Presently it was on the swell and Manuel cried, "He go on the reef; cut away, cut!" But I had not had my arms jerked and nearly pulled out for half an hour to cut away, so, being in command, I refused, told my sculler to attend to his part of the affair and keep the dinghy after the fish. I heard him mumbling and kicking off his shoes, and the next moment I saw the swordfish, its great fin entirely out of water, on the half-submerged rocks; then a big roller took us, and in a mild Hawaiian fashion we went boiling in; as we struck the dinghy rolled over and over, and we jumped and went shooting in, to find bottom knee-deep. When the boat righted, Manuel had a grin of satisfaction on his dusky face as the sailfish had parted company with us; the line had doubtless chafed off on the coral rocks, and he held the line up to prove it.

This was hard luck, and we both, after the fashion of anglers ancient and modern, decided that, beyond any question, it was the largest and most ferocious sailfish ever grained on any reef.

Manuel guessed it at ten feet, and its weight at two hundred and fifty pounds, but I, who had all the really hard work, thought eight feet and one hundred and fifty pounds was enough, and, doubtless, we were both wrong. The average fish of this kind taken is six or seven feet in length, but I am confident that I have grained specimens and lost them, that were eight or nine feet long. The cousin of this species, *Istiophorus gladius*, the sailfish of the Indian Ocean, is said on rather uncertain authority to attain a length of twenty feet or more, and so I have probably not exaggerated my own fish. The reef here was perforated or washed out, so that there were several channels through which large

fishes came in at night to feed in the lagoon, and the swordfish doubtless made for one of these.

I do not entertain the suicide theory, believing the fish to be a very stupid creature, yet a very dangerous one. I have taken a number of these fishes with the grains, and lost more, and they invariably made a terrific fight, slashing about in all directions, though to my mind the fish is not really so dangerous as a large tarpon swinging in the air.

The sailfish is not an uncommon rod catch from Palm Beach to the outer reef, and has on many occasions provided excitement of the most intense quality. In 1901 the Florida papers contained accounts of a desperate battle with a swordfish off Sea Horse Key; one was hooked, and in making a leap nearly fell on one of the ladies, a Mrs. Moore, of Kansas City. In its second leap the fish struck where she had been sitting and hit an iron part of the engine with such force as to break it; the fish landing in the cockpit, where it made things very lively for a while, but was killed before it injured any one. This fish was only seven feet long. I once struck what I supposed was a big fourteen-foot sawfish, as it was in very shallow water between Bush and Long Keys; but when it rose, I saw that it was a very large swordfish, probably the fish the Cubans call *Aguja blanca*. My grains were the ordinary barracuda "outfit," the line being about the size of a cod-line, and I had but one hundred feet of it. I had the end made fast to the forward thwart. When the fish felt the grains it went up into the air, falling broadside on, and the next few seconds were very lively ones for me, in trying to avoid the leaping snake-like line; then came the end—the line of course broke. At the time I thought the fish was twelve feet long. This was a long time ago, and in the dim perspective, that swordfish has lengthened out and grown with the years. The swordfishes of this genus (*Tetrapturus*) have not the large fin and are called spearfishes, but they are equally dangerous, and

to my mind, the embodiment of hard-fighting game fishes, fighting as well as the tarpon.

Profesor Poey, the well-known Cuban naturalist, says of it: "Such fishing is not without danger, for the spearfish at times rushes upon the boat, drowning the fisherman or wounding him with its terrible weapon." The sword of these fishes is much shorter and smaller than that of the big *Xiphias*, but it is equally effective. The sloop "Morning Star" was so badly rammed by one that she was obliged to put into Charleston. When they hove her down the sword was seen to have gone through two inches of planking inside the after run. Had the vessel been far out to sea, she would doubtless have gone down.

At Santa Catalina Island, the Tuna Club recognizes the great swordfish as a game fish of the very first rank, as also the marlinespike fish, *Tetrapturus*. Among its beautiful cups is one on which is inscribed the name of the angler who takes the largest specimen every year with rod and reel. At Palm Beach, Florida, the sailfish is now taken with a rod, to the joy of the anglers and the terror and dismay of many negro boatmen, who generally stand up and look anxious, when the line becomes slack.

One of the most enthusiastic of these swordfish anglers is Mr. John B. Cauldwell of New York, who sends me the following notes on the new game fish of Florida:

"To sportsmen in search of giant game fish no fighting member of the finny tribe, inhabiting the Atlantic, affords such lively sport as the great sailfish to be found off the Florida Coast. The small number of these rare fish annually taken in Atlantic waters is partially explained by the uncertainties and difficulties to be encountered in locating their presence, as well as the great skill, experience and endurance required in handling them with rod and reel. Although infrequently seen near the Florida Keys, they seldom leave the vicinity of the warm Gulf Stream, whose waters approach within five miles of Palm Beach, the near-



THE RECORD SWORDFISH AT SANTA CATALINA.

Taken with rod and reel. Weight about 150 pounds.

est point of contact to the shores of Florida, from which famous resort one may embark in surf or power boats for the fishing grounds. There is a fairly good chance of finding them on warm, sunny days, swimming with their great dorsal fins projecting slightly out of the water, and immediately a school is discovered, all power must be used to forge ahead of these fast-swimming denizens of the deep and cross their path a hundred yards in advance, then stop and allow the boat to drift slowly along, when the rod should be cast with a lively fresh bait. While they often strike at cut bait or a spoon in trolling, they are seldom well hooked, owing to the peculiar character of their jaws. As a rule they bite very quietly, and must be given thirty to forty feet of line before striking, as their mouths are small, hard and bony, not unlike the tarpon in their internal structure, and can rarely be captured unless the bait is well swallowed. When once hooked they become frantic and create a terrific commotion, first endeavoring to peel the most powerful reels in their mad rushes, then making frequent perpendicular leaps in rapid succession, clearing the waves by many feet, trying desperately to shake out the hook, and finally varying these sporty tactics by making long side dashes just under the water, somewhat like a kingfish, only these movements are occasionally interrupted by low, rapid flights just above the water, when their immense sail seems to play its part in aerial navigation. The sail just referred to is a remarkable development of the dorsal fin in which the ribs are connected by a sort of silken membrane, thus giving in large specimens of seven to eight feet in length an equal number of square feet of sail area and this in turn is balanced by a long, narrow pectoral fin which apparently plays the part of a center-board. Their powerful spears have been known to create consternation among the occupants of a fishing boat, as records exist of these fish having jumped into small boats and even charged them under the water line. It generally takes half to three-

quarters of an hour before they can be brought to gaff and when landed in a small boat pandemonium reigns supreme for many moments, as both their powerful tails and dangerous spears are prepared for instant retaliation. Like the tarpon, they have a common enemy in the large sharks that abound in tropical waters, and when the latter appear upon the scene the excitement and antics of these magnificent fighters are greatly incensed.

The sailfish, although but little known to the average deep-sea angler, is surely destined to rival the tarpon in the estimation of northern fishermen, eager to encounter piscatorial novelties with extraordinary fighting prowess. Only the most persistent and ardent sportsmen who are at home in the rough waters and strong currents of the Gulf Stream can hope to secure one of these marvelously constructed trophies, the appearance of which when first caught far excels in brilliancy and variety of coloring the much-lauded silver king. This interesting fish, which may be distinctly classified as an open-sea fish (*Istiophorus nigricans*), is occasionally found near the Brazilian Coast, in the West Indies and off the West African Coast from the Cape of Good Hope to Morocco. The first of the species ever taken off Palm Beach was captured about four winters ago by Richmond Talbot of Tuxedo, and since then scarcely more than one fish a year has been taken up to last season, but this winter's catch already foots up the extraordinary total of a dozen specimens, and among the successful amateur fishermen may be mentioned Messrs. Crimmins, Christian, Mitchell, Longly, Waterbury, Park, Miller, and Cauldwell."

Mr. Cauldwell so far has made the phenomenal record of landing two fish in one morning, the largest of which measured seven feet, six and one-half inches in length.

Real sport should have at least a suggestion of danger in it. The cross-country rider takes a chance every time he makes a fence; the captain of the flying machine takes his life in his hands, as does the fast motor driver, the tiger-

hunter, and the man who believes in gaffing tarpon. And so the angler, who takes a big swordfish or spearfish with rod or grains, is in the anticipatory state of D'Artagnan—he is liable to be spitted at any moment.

Some years ago the late Professor G. B. Goode, of the Smithsonian Institution, made a collection of the actual instances of vessels and men that had been injured, and there were so many that the swordfish can easily be put down as a menace to navigation and to human life. Not a week passes but, somewhere, some vessel is rammed by this swash-buckler of the sea.

CHAPTER XXVIII

AN OCEAN SAPPHIRE



ANGLERS often wonder why the fishes do not interest the public as do the birds, as they are also attractive and their habits interesting, indeed, fascinating. The reason, possibly, is, that birds are always in sight, while it takes searching to find the fishes.

This is suggested in a letter from Dr. Jordan when inviting me to join him in spinning some fish stories: "If we go ahead with our book you ought to try Santa Cruz (for salmon), and stop off at Stanford for refreshment, then go to Plumas County (Feather River), (for rainbow trout), and by good rights you ought to go over the White Pass from Skagway down to the Yukon. The grayling fishing is fine over there, and the great lake trout live in the White Pass."

If I had followed the trail indicated in these few words, I should indeed have had material for fish stories. One can sit under a tree and watch birds with a glass, or attract them about him, but to really know the fishes one must travel literally from Santa Cruz to Skagway, and possess himself with patience, hoping to "attain merit."

In recalling the incidents of a long experience in angling I fail to see in the vista of the years anything more interesting or exciting than the angling, literally between the lines as I write; not particularly for the actual catch, but for the remarkable scene presented by myriads of fishes and the opportunity to observe them.

As one looks over the richly colored waters of Avalon

Bay, Santa Catalina Island, he sees thirty or more small launches in the offing lying close together, about three miles offshore, drifting with the slow current. These are the tuna boats, and as the word has gone forth that the yellowfin tuna has arrived every effort is being made to make record catches. Each boat has two anglers, equipped with a rod which weighs nine ounces, and a line eight or nine hundred feet long; a number nine, so light that it will not lift a nineteen-pound weight; yet, with this light tackle, all these anglers fish for game which attains a weight of seventy or eighty pounds, and which may tow a boat several hours before giving up.

Once on the ground, the water is seen to be of the richest blue, permeated with rays of light which seem to penetrate far down into the abysmal regions of the sea. The boatman stops the engine, baits the hooks with a small sardine or smelt; lines are cast, and the sport begins. Most of the boats are within talking distance, and nearly every other angler holds a bending rod and is playing a fish; and such fishing (for sea angling) probably never was seen before. Each gaffer sprinkles the water with chum (ground fish), and the result is seen in large and beautifully colored fishes which dart like meteors across the watery sky, literally the birds of the sea. There are skipjacks, bonitos, yellowfin tunas and the common long-finned tuna or albacore; not a few, not a school, but literally the blue heavens of the ocean starred and streaked with their comet-like forms, presenting a scene bewildering, to even veteran anglers.

To reach the chum, the fishes came directly to the surface, and as I was fishing for tuna I had to be constantly on the watch to jerk my bait from the maw of a twenty- or twenty-five-pound albacore, or long-finned tuna, or from a ten- or fifteen-pound bonito, a feat which required quickness of action, and which in itself was extraordinary, as hundreds consider the sport of albacore fishing of high quality. So crazed and excited were these fishes, so tame, so utterly

regardless of the launch and the men and women looking at them, waving at them, "shooing" them from the bait, that they could have been taken by impaling a sardine on a gaff and gaffing them as they attempted to take it; indeed I saw this done, and I think I could have fed these large fishes by hand.

The albacores, or long-finned tunas, looked like giant brown mice dashing to and fro, holding their long side fins out at an angle of forty-five degrees, or from a bird's-eye view like penguins. Some I noticed had a vivid blue streak along the median line, and when they tipped upward, dashing at my bait, I saw a blaze of silver and a flash of a big black eye.

The skipjack swam twice as fast as the long-fin—a humming-bird of the sea, a beautiful scintillating flash of blue; radiant creatures, which shot up from profound depths like a bunch of sapphires, with a peculiar wriggling motion of the tail. They were altogether too swift for the others, reached the bait before them; yet the big hulking albacores, weighing from thirty to forty pounds, did not object. When the bait was eaten, the fish disappeared suddenly, then when a handful was tossed over I could see the sapphires rise from far below, and like beams of tourmaline dash along the surface.

I held my bait just at the surface, and repeatedly had to jerk it away, as I was saving it for the wary tuna, and suddenly he came.

"There he is!" cried Neal, the boatman. "See him!"

A shower of blue skipjacks darted along, the bodyguard of this prince, a dignified, staid fish, twice as large as the albacore, of a delicate greenish hue, its median line a dazzling blue, its finlets lemon-yellow; a radiant creature, the yellowfin tuna, the finest of the game fishes of Santa Catalina; a fish doubtless ranging up to one hundred pounds, but more commonly found at about forty. There were now fifty or more of these three kinds of fishes in sight all about



A ROD CATCH OF YELLOW-FIN TUNA SHARKS, ETC.
Taken off Coronado by Mr. Higgins and Mr. Strafford.

us at the same time; darting here and there, rising out of the depths with splendid bounds, shooting athwart the blue sky of the ocean. My companion, Mr. T. McDaniel Potter, and I agreed that we had never witnessed anything quite like it for number, dash, beauty and consequent excitement.

My companion, one of the most skilful anglers I have seen, told me a terrible joke he played upon the ladies of the family the day before. He brought them out to this very place and adjured them to preserve perfect silence, or the fish would not bite; and for some time they quietly fished and looked at the amazing spectacle; then, hearing shouts and laughter from other boats, discovered that the dashing fishes either did not hear at all, or did not care. How my companion settled this he did not say.

The tunas appeared to favor the little skipjacks, and came sweeping onto the scene with a rush that was more than impressive; filling the water with light and color, a most extraordinary spectacle, hardly to be believed by the eastern or English sea angler who too often in their own waters are monuments to patience.

Two anglers, one a young lady, sat watching the rushing, feeding throng; trying to pick out the tuna, jerking the lure away from the albacore and skipjacks; now holding it over the surface, while the big fish snapped at it, then dropping it, as the gay tuna came dashing along. It was just then that the lady was too slow; a skipjack seized the lure, and with an astonishing blare from the reel—*se-e-e-e-e-e-e-e-e!*—was away, taking about two hundred feet of the cobweb-like line, disappearing like a vision, in the deeps of the channel. For some time she could not stop it, and the line fairly melted from the reel; then the fish slowly came up until it reached the surface far away, and began a gallant fight against the lady and her light rod, which lasted three-quarters of an hour.

I was confident that I had seen a skipjack seize her bait, but Mexican Joe, who was now the boatman, with his forty

years of accumulated angling wisdom, said that a skipjack could not put up such a fight, in which I readily agreed, as the ordinary catch—indeed, the largest I had seen in twenty years—did not weigh over ten pounds. Still the reel was shrieking, and the lady losing line as fast as she gained it by reeling, and at times the fish seemed to be seized with a frenzy and darted away so suddenly that both line and rod were threatened.

Yet so cleverly did the angler play it that the expected did not happen, and the fight went on. Time and again the game creature made a two-hundred-foot circle of the launch, sweeping around, boiling at the surface, too far away to be seen; then it would dash downward, plunge into the depths, always to come upward, with the strange thrill of the skipjack. Yet who ever heard of a skipjack making such a fight as this? It pulled the launch about, and more than once the lady cried that she could not move the fish, nor stop it from taking all the line. But she always rallied at the last moment, and after half an hour or more, began to gain the ascendancy, and was reeling the game in, which was now always at the surface, in direct contrast to the albacore and tuna, which, with the yellowtail, plunge into the deep sea and sulk like a salmon.

This habit of surfacing marks the skipjack as one of the best fighting sea fishes; yet I could not believe that a mere skipjack could battle so long, and when it made a sudden rise from deep water I was convinced that it was a shark, as all the sharks I had taken with a rod made this rising play so uniformly that it was characteristic. I thought that the fisherwoman had hooked a skipjack which had been seized by a shark which she was now playing. The expression of my opinion resulted in an avalanche of stories of sharks. The boatman had taken in a whitefish which was seized by a shark, and he was holding it off with his gaff when the fish, a fierce bonito shark, surged forward and attempted to seize his arm, just missing it but tearing his shirt-sleeve into

ribbons. Another angler was hauling in a bass which had been caught by a yellowtail, which in turn was caught by a jewfish; just as the latter was being hauled in a big shark appeared and cut the jewfish in halves, releasing the rock bass and yellowtail. The unpleasant, unreasonable party to whom this fish story was related asked, "What took the shark?" There are people who are never satisfied, and this man was one. His halo will not fit him in the next world, or he will always be growling because he has to sit on a damp cloud, as the pictures in the old and good books suggest. When told that nothing took the shark he looked really hurt. Of course one might have said that a big orca, or killer whale, came along and bit the shark in two, but the present writer, at least, does not propose to be drawn into an illicit exaggeration for the mere sake of one more fish.

The unknown still circled the boat fifty feet away, but it was presently reeled in, and standing up, I saw that it was a legitimate fish, not a shark. I could see it dimly, swimming around in a great circle; then the lady brought it alongside, into the realm of the gaffer, and we saw that it was a bonito, or skipjack, the largest probably ever seen or taken in these prolific waters, weighing twenty pounds, more than twice the weight of the average fish.

Few fishes are so beautiful in the water or out as the bonito, and as the game came in, it seemed to fairly scatter scintillations of light and color in every direction, like a tourmaline. Its back was a deep beautiful blue, indescribable in its intensity, standing out even against the blue of the deep channel. Its lower portion was silver, marked with four dark bands, and over its entire surface flashed a delicate vestment of old rose or pink, which made it comparable to the interior of the gorgeous abalone. It was a literal sunburst of the sea, which gave the lady a silver cup and much fame, as fame goes among sea anglers.

CHAPTER XXIX

THE LOVE AFFAIRS OF BLENNIES IN THE KELP



THE old writers, especially the immortal Du Bartas, ascribed to fishes many of the attributes of human beings. He referred to their loves, and in the verses of Dr. Donne, quoted by Walton, we find:

“When thou wilt swim in that live bath,
Each fish, which every channel hath,
Most amorously to thee will swim,
Gladder to catch thee, than thou him.”

Ælian, who wrote in the time of Hadrian, of artificial May flies, described the Adonis of fishes; and Walton says: “There are also lustful and chaste fishes of which I shall give you examples.”

Du Bartas writes:

“The adult’rous Sargus doth not only change
Wives every day, in the deep streams.”

And again:

“But contrary, the constant Cantharus
Is ever constant to his faithful spouse;
In nuptial duties, spending his chaste life;
Never loves any but his own dear wife.”

And again:

“But for chaste love the Mullet hath no peer.”

The romance of the fishes contains many stories of interest, of which I may select one instance, and pass by the loves of the sticklebacks and their nests, the domestic trials of the

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catfish, the floating nest of the Paradise fish, and many more, merely saying *en passant* that in almost every case the female deserts eggs and young, leaving them to the tender care of the male, who is equal to the situation.

One of the most interesting fishes found in the great kelp beds, more particularly the weed within the kelp along the shores of Southern California, is the so-called kelp fish, a kind of blenny, *Heterostichus rostratus* (Girard). It so closely resembles the color of the weed in which it habitually lives that it is almost impossible to distinguish it; indeed, when lying in a boat over the kelp bed, I have often been deceived and taken a frond of waving kelp for the fish, as the latter not only imitates the weed in color, but seems to assume strange postures, either standing on its head or tail in the kelp, so resembling the weed in shape and color that it is almost impossible to see it. The sight, looking down into this forest of weed, is an entrancing one; its tints, tones and colors, its shades of green and olive, the various shapes, forming a veritable garden of the sea, in which strange and beautiful fishes poise and swim, seemingly set as in a picture against a background of blue.

I have often seen the kelp fish resting on its head on a leaf of kelp, and swinging to and fro as the wave came in; and during the past year I had an opportunity to watch various specimens in the Santa Catalina Island Aquarium. In the tank were two adult kelp fishes and a smaller fish of another kind. The larger kelp fish, and this was the female, was about nine inches long; the male measured about five inches in length. I was first attracted to them by the savage attacks of the small kelp fish on the stranger, and investigation showed that the male kelp fish was in splendid nuptial colors and was enamored of the female.

"The normal color of both fishes is a dark reddish-brown or olive, depending upon their surroundings . . . below the lateral line there is a series of light spots, continuous, with a distinct light bar from eye to edge of the opercle,

bordered with black above these, a similar spot on the base of the pectoral; an irregular line of large spots following the outline of the body under dorsal and above anal; a clear-cut white streak from dorsal to tip of snout and continued on lower lip, the hue and pattern of color varying greatly; young examples being most variegated; a translucent spot behind third dorsal spine generally followed by singular spots for the whole length of the fin." This is Dr. Jordan's description of the coloring which, while in low and modified tones, is very beautiful, and its resemblance to the surrounding kelp remarkable.

I have often swung my boat over the kelp bed and peered down into the heart of the weed, and watched the folding and unfolding of the leaves as they were swept back and forth in tidal measure. In among the weed, standing on its head, perhaps, I would see the kelp fish moving with the swell, so exact in its resemblance to it that it was difficult to distinguish between them.

Specimens in a tank grow paler and less highly colored, and the observer sees a fish perhaps a foot long, with a long muzzle, a soft dorsal fin from head to tail, with five upright pronounced zigzag angular bands of darker colors with other spots and tints of pure white—altogether a beautiful fish. Even the eye partakes of the general coloring, and has a peculiarity of that of several fishes, of following one about, and acting seemingly independent.

The offending fish referred to was removed from the tank giving the kelp fishes the entire room, and one day I saw that the male had assumed a striking nuptial garb. All his colors were highly accentuated and brilliant; what had been white was now lavender and blazing silver; the dark angles in the zigzag barring took on darker tints, and were emphasized by countless hues of lavender, yellow, blue and seeming gold, while patches of silver, old rose, lavender and white appeared here and there the entire length of the fish.



MALE AND FEMALE KELP-FISH.

Mimicking Kelp over their nest. Santa Catalina Zoological Station.

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The fish was seemingly conscious of his gorgeous colors. His long dorsal fin was erect and resplendent with all shades and tints from green to lavender, vibrating and scintillating in the soft light, and the fish was alert, on the *qui vive*, fully sensible of the importance of the situation and his responsibilities.

In the tank were several small bunches of a deep-maroon seaweed, about four or five inches high, and as I watched the fishes, the female, large and heavy, approached the weed, seemed to examine it, passing around it several times; then I observed her swim around the weed pressing the ventral surface to it. She had caught the branches together by a pure, white cord, exact in its resemblance to the silk of a silkworm, the cord being very large, almost the size of a small eyeglass cord, or a thick white thread, the white being of a dainty variety. This cord was four or five inches long, of a viscid nature, as it clung tenaciously to all the branches she touched and held them together. I could see myriads of small eggs attached to the cord, which are to be seen in the photograph by the aid of a glass.

When four or five inches of the white cord were attached, the fish would rest; the male fish taking her place, hovering over the eggs. Then she would resume the egg-laying process, winding the tenacious silken cord about the weed, tying it together, binding it up, until it assumed a globular, or oval shape, about the size of a hen's egg. She frequently pushed her way through the mass of weed, but more frequently wound about it, binding it tighter and closer, until the dark purple weed mass fairly glistened with the mass of glass-like eggs. The entire nest, as shown in the accompanying photograph I had taken, was formed in about two hours, the fish dropping to the bottom after each effort and lying for ten or twenty minutes during which the mate swam over the eggs, or lay by her side all alert, displaying a viciousness altogether unexpected in so small a creature.

Recognizing the novelty of the situation, I procured a

photographer, who was obliged to make the picture under cover and through glass and water, no attempt being made to take the fish. All his efforts were devoted to getting the nest itself in focus, which was accomplished, the white bands showing distinctly, running in every direction.

A few days later the lady fish began to construct another nest. This time she selected a shapely bunch of red and yellow weed which, attached to a stone, grew gracefully upward and spread out into a fan shape. The male was still more attractive in his nuptial garb, the colors blazing and scintillating in the light. He appeared to be aroused to a high state of excitement, and started up as I approached, making every effort to intimidate me. The female passed around and around the bunch of weed, winding her pseudo-silken cord into an elaborate egg-shape, the male hovering over her, vigilant, aggressively defiant.

Ordinarily the fish is timid, but when I reached down to lift the nest this faithful swain dashed at me with every evidence of fury, trying to bite me with his small mouth, nor could I push him away, the devoted creature repeating the attack, forcing himself between hand and nest and expressing so much devotion that I surrendered and withdrew my hand, when he stationed himself head to the glass, watching me angrily as long as I was in sight.

All the time the female paid no attention to me, and like most of her kind, seemed utterly to lack maternal affection, not possessing it even in the remotest degree; but what she lacked, her lover made up for; a gallant indeed, with sword always drawn, he was not only ready, but eager for the affray. He stood not on the order of going, but charged every living thing in sight, and to try him I placed in the tank a fish four times his size. He dashed at it like a flash, bowled the astonished giant over, and so intimidated it that I took it out and left the fishes to their honeymoon, unprovoked and undisturbed.

CHAPTER XXX

BOYS' FISH AND BOYS' FISHING



FTER all that has been said about anglers and angling, two-thirds of the line fishing of the world is done by boys. The boy may fish with a fly, but he does not spontaneously take to this method. Fly fishing is an art, a fine art beyond a doubt, but it is an art and, like all art, it is artificial. Fishing with an angleworm is natural. It fits into the need of the occasion. It fits in with the spirit of the boy. It is not by chance that the angleworm, earthworm, fishworm, is found in every damp bank, in every handy bit of sod, the green earth over, where there are races whose boys are real boys with energy enough to catch a fish. It is not by chance that the angleworm makes a perfect fit on a hook, with no anatomy with which to feel pains and no arms or legs to be broken off or to be waved helplessly in the air. Its skin is tough enough so as not to tear, not so tough as to receive unseemly bruises, when the boy is placing it on the hook. The angleworm is perfectly at home on the hook. It is not quite comfortable anywhere else. It crawls about on the sidewalks after rain, bleached and emaciated. It is never quite at ease even in the ground, but on the hook it rests peacefully, with the apparent feeling that its natural mission is performed.

There may be other creatures naturally used as bait. The dam worm which hatches out into the thunder bug, or in more precise language, the helgrammite that hatches out as a Dobson fly, *Corydalis corutus*, looks well on the hook, though it does not feel so, and there are other larvæ of ephemerids, caddis worms and the like, which can be used

on occasion. But a minnow with a hook through its dorsal fin is a most unwilling lure for the black bass or the pike, and a grasshopper cannot take its place in a trout brook, without certain crushing of his carapace.

So having found the natural boy with his natural bait, we will equip him with hook and line, a pole cut from some osier or willow thicket. On his line there will be a cork to hold the hook from the bottom and a sinker of lead to make it fall. With all this, and bare feet and a ragged straw hat, a jackknife to cut a forked stick to string the fishes on, and the boy is ready to go a-fishing.

And what fish will the natural boy naturally take? In America there is but one fish which enters fully into the spirit of the occasion. It is a fish of many species according to the part of the country, and of as many sizes as there are sizes of boys. This fish is the horned pout, and all the rest of the species of *Ameiurus*. Horned pout is its Boston name. Bullhead is good enough for New York; and for the rest of the country, big and little, all the fishes of this tribe are called catfish. A catfish is a jolly blundering sort of a fish, a regular Falstaff of the ponds. It has a fat jawl, and a fat belly, which it is always trying to fill. Smooth and sleek, its skin is almost human in its delicacy. It wears a long mustache, with scattering whiskers of other sort. Meanwhile it always goes armed with a sword, three swords, and these it has always on hand, always ready for a struggle on land as well as in the water. The small boy often gets badly stuck on these poisoned daggers, but as the fish knows how to set them by a muscular twist, the small boy learns how, by a like untwist, he may unset and leave them harmless.

The catfish lives in sluggish waters. It loves the mill-pond best of all, and it has no foolish dread of hooks when it goes forth to bite. Its mouth is wide. It swallows the hook, and very soon, it is in the air, its white throat gasping in the untried element. Soon it joins its fellows on the

forked stick, and even then, uncomfortable as it may find its new relations, it never loses sight of the humor of the occasion. Its large head and expansive forehead betoken a large mind. It is the only fish whose brain contains a Sylvian fissure, a piling up of tissue consequent on the abundance of gray matter. So it understands and makes no complaint. After it is dried in the sun for an hour, pour a little water over its gills, and it will wag its tail, and squeak with gratitude. And the best of all is, there are horned pouts enough to go around.

The female horned pout lays thousands of eggs, and when these hatch, she goes about near the shore with her school of little fishes, like a hen with myriad chicks. She should be respected and let alone, for on her success in rearing this breed of "bullying little rangers," depends the sport of the small boy of the future.

But while the bullhead is the daily bread of the angling boy, he has other treasures which he values more highly. There are trout in all the cold brooks of the northland, and some of the best of these only the small boy knows to this day. I might tell you of one which flows through the wooded hills to the upper Genesee—but after all it is better nameless, closed to the memory of the days when I was a small boy myself. And then, not too far away, there is "Grandpa Jordan's Creek," which flows down the hills into the Oatka River, and I hope that this suggestive name has not been changed to a closer imitation of the River Jordan.

But finer than any trout is the old-fashioned green and golden sunfish with a black ear trimmed with scarlet. This is the pumpkin seed of the boys' vernacular, a bright "coin—fresh from the mint," resplendent in all the colors worth seeing in the rainbow.

It is only a little fish, with a nest in the eddy where the stream turns around the root of a big stump, but it leaps like a hawk on the hook, with a pound of momentum for every ounce of its weight. In other parts of the country,

this sunfish gives place to others, but all have the same lively temper, the same care for the young, and the same disposition to outweigh a fish of ten times his size when taken on the hook. Some of these are called blue-gills, dollardee, red-eye, rock-bass, grass-bass. And with these and of much the same nature, is the crappie—the white perch of the south. This is a fish for a man to take, but it too was a boy's fish first.

Professor Goode quotes from "St. Louis," in the "American Angler," the following account of crappie-fishing near St. Louis:

"Our crappie, the greatest pan-fish of the west, is highly esteemed by us for the table. We have seen a monster crappie this spring, weighing over three pounds, taken at Murdock Club Lake, near St. Louis, on the Illinois side. We consider one of one-and-a-half to two pounds a large one. They are taken about logs and tree-tops, on the water's edge in our rivers and sloughs. They are greedy fellows, but as soon as hooked, step right into the boat without a struggle for liberty.

"A gentleman of this place, a member of one of our old French families, who turned the scale at about three hundred pounds, was noted for his success in crappie fishing. He would have his large flat towed to a tree; when, the boat tied to a limb, he would settle himself for the day on a pillow placed in a large split-bottom chair. Hauling his live-box and minnow-pail alongside, he would bait two hooks attached to a strong line, using a weak snell, so that in case the hook should foul, he could break it loose. He used a float and short stout bamboo rod, and, shaking the bushes a little, 'to stir up the fish,' would select an opening and carefully drop on the minnow two feet below the surface, pass the end of the rods through rings in the side of the boat, light his pipe and wait for something to happen. It was not long; and after the fun began, it was the same monotonous lifting out of fish, and dropping them into the

live-box all the day long, and was continued on the next, until he had brought to creel over three hundred.

"I have always associated in my mind the crappie and the love of ease and quiet of our old French inhabitants. Nothing could more truly represent contentment and ease than the picture of this simple-minded old gentleman on his annual crappie-fish, at King's Lake."

One of the authors of the present volume knew of an old fellow in Plumas County, California, who, being blind, was led every day to a little bay on Feather River, where he would sit and fish the entire day. After a time the house cat, being inordinately fond of fish, discovered the object of the blind man's daily trip, and as he would unhook a little trout or a "sucker" and lay it down beside him, she would seize it and carry it up to the house, much to the delight of the summer boarders, who watched the cat, and the amazement of the blind angler.

And these chubs form no small part of the day's record. There is the horned dace, with steel-blue back and crimson fins. There is the horny head, an old standby anywhere, but most to be counted on in Kentucky. There is the chub of chubs, with the horns on the head of the breeding males, a nuptial ornament that is anything but pretty on a fish. There is the fallfish, largest of all the eastern chubs, that builds its nests of stones in the swift waters of the north-east, and is really a noble fish for all its lowly origin. "It is a soft fish," Thoreau tells us, "and tastes like brown paper salted." For all that, it is a fish, and a fish of the swift waters—one of the things worth while. The present writer has taken one with a fly in the St. Lawrence, and examined nests which must have weighed half a ton.

Perhaps the most surprised of all boys in the world was one, not a country boy, but a city production from San Francisco, who one summer went up to visit his uncle at Clear Lake, California. The first thing he asked was, "Are the fish biting?" "Just tol'able," replied the old gentleman;

and then he told him to try for squawfish at Kelsey Creek. The boy wasted no time in going, and soon found an attractive little stream and began to cast. For a long time he had no luck, but suddenly he had a bite, then another, then he began to see fishes darting about, and then—that boy almost turned and ran. Was he dreaming; was it some trick of the imagination? He rubbed his eyes, pinched himself, and as it hurt, he knew it was true, he really was awake, and that creek was so full of squawfishes that an old mandarin duck walked across on their backs. You may not believe this, gentle or ferocious reader, but here is Kelsey Creek, there are the squawfishes by tens of thousands; there is the astonished boy holding the rod, all shown in the photograph, and I dare say the old mandarin duck is behind the trees to the left, pinching herself and wondering if it is really so.

Suckers there are, too, of many kinds, and as one goes westward, there are many and many kinds of chubs. Largest of all are the squawfishes of the west.

It is no dispraise to a fish-story that its author never tells it twice alike. Slavish repetition of stories indicates poverty of experience as well as of invention. Hance's story of the squawfish salmon of the Colorado Cañon thus appears in the "Saturday Evening Post":

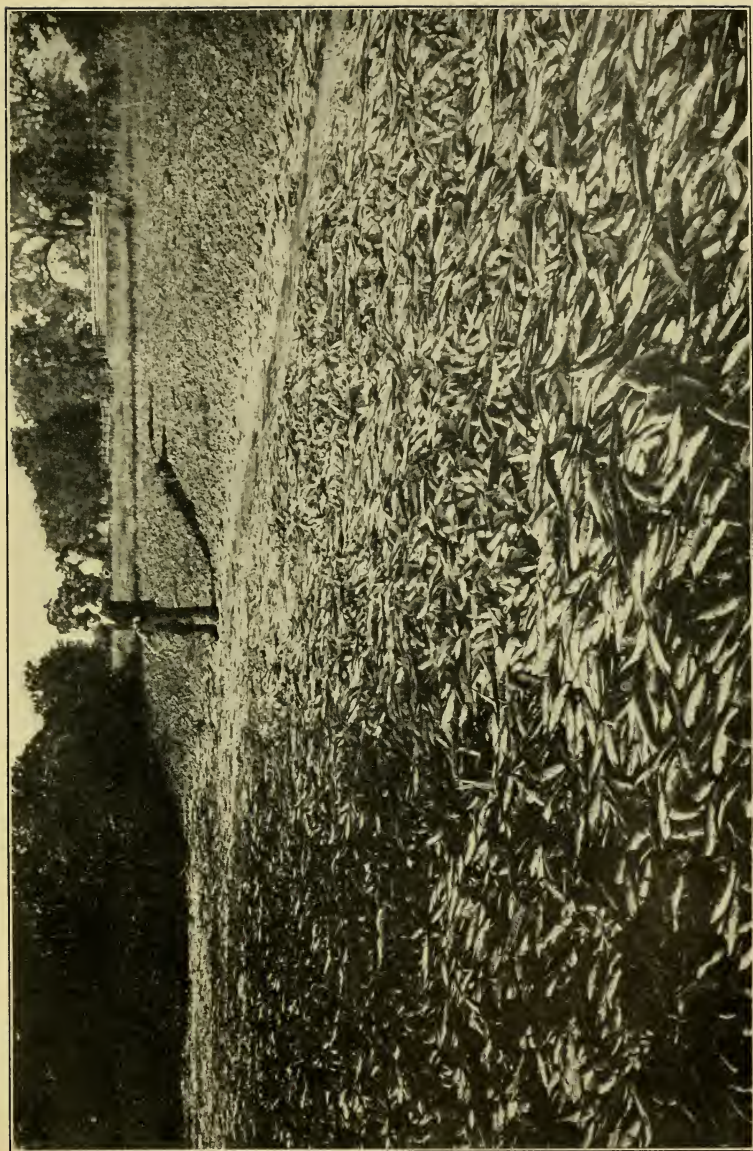
"One day Mr. Hance was standing by the top of the Bright Angel trail, with a few pieces of meat in his hand.

"What are you going to do with that meat, Mr. Hance?' asked a pert tourist lady from Boston.

"Why, I'm goin' down to feed my pet fish with it.'

"Your pet fish? Have you a pet fish? Oh, tell me about it.'

"Wal,' said Hance, 'it was this way: One time, some years ago, I was fishin' down there in the cañon in the Colorado River. I wasn't havin' much luck, but all of a sudden I seen a commotion in the water, and a tolerable-sized fish



THE ASTONISHED ANGLER.

rized up and looked at me. I seen the fish was angry, and, as there ain't anythin' much more desprit than a mad fish, I ducked. I was just in time, for the fish leaped out of the water and straight at me. He'd 'a' speared me sure if it hadn't been fer that duck of mine. As it was, he went clean over me and landed in a pool in the hollow of the rocks behind me, where there was a considerable pond of water. He couldn't get out, and he's there yet. Him and me is fast friends now, and I go down twicet a week and feed him.'

" 'How long ago was that?'

" 'It was seventeen year ago.'

" 'The fish must be quite large by this time.'

" 'Oh,' said Hance, 'not so much! Last time I put the tape on him he was only twenty-seven feet long. He ain't got his full growth yit.'

CHAPTER XXXI

SEÑOR ALCATRAZ AND THE CATFISH



HE boy is not the only creature which has dubious experiences in fishing for catfish. When the catfish was first introduced from the Potomac into the Sacramento, it went hard with the kind of rock-bass we call the Sacramento perch. The perch fed on the little catfish, which spread out its fins, set its spines and killed the fish which was digesting it. And in some very little catfishes called the mad-tom and the stone cat, found in the streams of the middle west, these spines are reinforced by poison sacs which make the little fishes as venomous as wasps and as unfit for food as cactus or dynamite.

And this is the story of the experience a large sea bird once had with a Mexican catfish:

He was just a bird when he was born, and a very ugly bird at that. For he had big splay-feet with all the toes turned forward and joined together in one broad web, and his wings were thick and clumsy, and underneath his long bill there was a big red sack that he could fill with fishes, and when it was full he could hardly walk or fly, so large was the sack and so great was his appetite.

But he kept the sack well filled, and he emptied it out every day into his stomach, and so he grew very soon to be a large bird, as big as a turkey, though not as fat, and each day uglier than ever.

But one morning as he was walking out on the sandflat of the Astillero at Mazatlan, Mexico, where he lived, he

saw a big fish which had been left by the falling tide in a little pool of water. It was a blue-colored fish, with a large bony head, and no scales, and a sleek, slippery skin. He did not know that it was a bagre, but thought that all fishes were good to eat, so he opened his mouth and slipped the fish, tail first, down into his pouch. It went all right for a while, but when the fish woke up and knew he was being swallowed, he straightened out both of his arms, and there he was. For the bagre is a kind of catfish, and each arm is a long stiff, sharp bone, or spine, with a saw edge the whole length of it. And all the bagre has to do is just to put this arm out straight and twist it at the shoulder, and then it is set, and no animal can bend or break it. And it pierced right through the skin of the bird's sac, and the bird could not swallow it, nor make it go up nor down, and the bagre held on tight, for he knew that if he let go once he would be swallowed and that would be the last of him.

So the bird tried everything he could think of, and the fish held on, and they kept it up all day. In the afternoon a little boy came out on the sands. His name was Inocente, and he was the son of Ygnacio, the fisherman of Mazatlan. And Inocente took a club of mangrove and ran up to the struggling bird, and struck it on the wing with the club. The club broke the wing and the bird lay down to die, for with a broken wing and a fish that would not go up nor down, there was no hope for him.

When Inocente saw what kind of a fish it was, he knew just what to do. He reached down into the bird's sac, and took hold of the fish's spine. He gave each bone a twist so that it rolled over in its socket, the upper part toward the fish's head, and then they were not stiff any more, but lay flat against the side of the fish, just as they ought to lie. Then the fish knew that it had found a master, and lay perfectly still. Soon the bird gave a great gulp and out the bagre went on the sand, and when the tide came up it swam away, and took care never to go again where a bird could

get hold of it. And the bird with the broken wing had learned something about fishes, too. But it could not fly away, so it waited to see what the boy was going to do.

The boy took the bird home. And old Ygnacio put a splint on his wing and covered it with salve, and by and by it healed. But the bone was set crooked and the bird could not fly, so the boys called the bird Señor Alcatraz, which is the Spanish for Mr. Pelican, and Señor Alcatraz and all the boys and dogs and goats became good friends, and all ran about on the streets together. And when the boys would shout and the dogs bark, all Señor Alcatraz could do was to squawk and hiss and open his big mouth wide, and show the inside of his red fish sac.

And when the boys would go fishing on the wharf, Alcatraz would go too, and he would stow away the fishes in his pouch just as fast as the boys would catch them. But if they caught a bagre fish, he would turn his head the other way, and then run away home just as fast as he could.

And when the men drew the net on the beach, Alcatraz would splash around inside the net, catching whatever he could, and having lots of fun in his clumsy, pelican fashion. Then he would run along the street with the boys, squawking and flapping his wings and thinking that he was just like them. And if you ever go to Mazatlan, ask for Dr. George Warren Rogers, and he will show you the way to Ygnacio's cabin on the street they call Libertad. And there in the front yard, in a general scramble of dogs, goats and little Indian boys, you will see Señor Alcatraz romping and squabbling like the best of them. And you will know which he is by the broken wing and the red sac under his throat. But if you say bagre to him, he will run away under the doorstep, and hide his face till you go away.

CHAPTER XXXII

THE SWEET FISH OF JEWEL RIVER



THE ayu, or sweetfish, or samlet, of Japan, resembles a small trout in form, habits and scaling. Its teeth are, however, totally different, being arranged on serrated plates on the sides of the jaws, and the tongue marked with similar folds. The ayu abounds in all clear streams of Japan and Formosa. It runs up from the sea like a salmon. It reaches the length of about a foot. The flesh is very fine and delicate, scarcely surpassed by that of any other fish whatsoever. It should be introduced into clear short streams throughout the temperate zones.

In the river at Gifu, in Japan, and in some other streams, the ayu is fished for on a large scale by means of tame cormorants. This is usually done from boats in the night by the light of torches. But tame cormorants will work by day as well, as the following account of the author's experience will show :

Tamagawa means Jewel River, and no water could be clearer. It rises somewhere up in the delectable mountains of Musashi to the eastward of Tokyo, among the mysterious pines and green-brown fir trees, and it flows across the plains bordered by rice fields and mulberry orchards to the misty bay of Tokyo. It is, therefore, a river of Japan, and along its shores are quaint old temples, each guarding its section of primitive forest, picturesque bridges, huddling villages and torii, or gates through which the gods may pass.

The stream itself is none too large—a boy may wade it—

but it runs on a wide bed, which it will need in flood-time, when the snow melts in the mountains. And this broad flood-bed is filled with gravel, with straggling willows, showy day-lilies, orange amaryllis and the little sky-blue spider flower, which the Japanese call chocho, or butterfly-weed.

In the Tamagawa are many fishes: shining minnows in the white ripples, dark catfishes in the pools and eddies, and little sculpins and gobies lurking under the stones. Trout dart through its upper waters, and at times salmon run up from the sea.

But the one fish of all its fishes is the ayu. This is a sort of dwarf salmon, running in the spring and spawning in the rivers just as a salmon does. But it is smaller than any salmon, not larger than a smelt, and its flesh is white and tender, and so very delicate in its taste and odor that one who tastes it crisply fried or boiled feels that he has never tasted real fish before. In all its anatomy the ayu is a salmon, a dwarf of its kind, one which our ancestors in England would have called a "samlet." Its scientific name is *Plecoglossus altivelis*. *Plecoglossus* means plaited tongue, and *altivelis*, having a high sail; for the skin of the tongue is plaited or folded in a curious way, and the dorsal fin is higher than that of the salmon, and one poetically inclined might, if he liked, call it a sail. The teeth of the ayu are very peculiar, for they constitute a series of saw-edged folds or plaits along the sides of the jaws, quite different from those of any other fish whatsoever.

In size the ayu is not more than a foot to fifteen inches long. It is like a trout in build, and its scales are just as small. It is light yellowish or olive in color, growing silvery below. Behind its gills is a bar of bright shining yellow of a color you will not see in any other river fish, and its adipose fin is edged with scarlet. The fins are yellow, and the dorsal fin shaded with black, while the anal fin is dashed with pale red.

So much for the river and the ayu. It is time for us to

go a-fishing. It is easy enough to find the place, for it is not more than ten miles out of Tokyo, on a fine old farm just by the Temple of Tachikawa, with its famous inscribed stone, given by the Emperor of China.

At the farmhouse, commodious and hospitable, likewise clean and charming, after the fashion of Japan, we send for the boy who brings our fishing tackle.

The tackle comes waddling into the yard, the three birds with which we are to do our fishing. Black cormorants they are, each with a white spot behind its eye, and a hoarse voice, come of standing in the water, with which it says *y-eugh* whenever a stranger makes a friendly overture. The cormorants answer to the name of Oü, which in Japanese is something like the only word the cormorants can say. The boy puts them in a box together and we set off across the drifted gravel to the Tamagawa. Arrived at the stream, the boy takes the three cormorants out of the box and adjusts their fishing harness. This consists of a tight ring about the bottom of the neck, of a loop under each wing, and a directing line.

Two other boys take a low net. They drag it down the stream, driving the little fishes—ayu, zakko, haë, and all the rest—before it. The boy with the cormorants goes in advance. The birds are eager as pointer dogs, and apparently full of perfect enjoyment. To the left and right they plunge with lightning strokes, each dip bringing up a shining fish. When the bird's neck is full of fishes down to the level of the shoulders, the boy draws him in, grabs him by the leg, and shakes him unceremoniously over a basket until all of the fishes have flopped out. One of my Japanese friends, looking at this process, said, "You can see now how Japan felt when she was forced to give up Port Arthur. Just like that bird."

The cormorants watch the sorting of the fish with eager eyes and much repeating of *y-eugh*, the only word they know. The ayu is not for them, and some of the kajikas

and hazes were prizes of science. But zakko (the dace) and haë (the minnow) were made for the cormorant. The boy picks out the chubs and minnows and throws them to one bird and then another. Each catches his share on the fly, swallows it at one gulp, for the ring is off his neck by this time, and then says *y-eugh*, which means that he likes the fun, and when we are ready will be glad to try again. And no doubt they have tried it many times since, for there are plenty of fishes in the Jewel River, zakko and haë as well as ayu.

CHAPTER XXXIII

THE HARDEST FIGHTERS



MR HENRY WOOTON, once provost of Eton, was an angler, and of the art he said: "It was an employment for his idle time which was then, not really spent idly; for angling was, after tedious study, a rest to the mind, a cheerer of his spirits, a diverter of sadness, a calmer of unquiet thoughts, a moderator of passions, a procurer of contentedness, and that it begot habits of peace in those that professed and practised it. Indeed, my friend, you will find angling to be like the virtue of humility, which has a calmness of spirit, and a world of other blessings attending up it."

Such sentiments have come home to many a "brother of the angle," whether wading up or down some woodland stream, where the wind makes soft music among the pine needles, or in the deep blue water at sea, where the splendid colors, the variety of cloud effects, the stillness, are all factors of the day's delight. Many a time, weary of the thousand and one diversions of life and its growing conventionalities, I have slipped out of the little vale of Avalon onto the sea of turquoise, which rapidly changed as the sun rose, and gave the clear, smooth disk of the ocean all the tints of the abalone or opal. We are far out at sea. The air is clear, and like the satin of the rose petal on the cheek. The high cliffs, rich in tone and color, are reflected in the sea; everything is calm and quiet, the ocean is asleep, save for the long mysterious pulsations of its breast—messengers from the deep and distant sea, telling of storm and disaster, far away. The very peacefulness of such a scene is a delight, and that

it is not lacking in possible excitement is evident, as your line flies from the reel, the click singing a song of the sea. Your game has not flung himself into the air, but has sounded, like a salmon or a whale, and is going down, down, until you wonder that a surface fish can live to so suddenly change its pressure, as at twelve hundred feet, it is perhaps absolutely black as night, and the pressure is equivalent to a ton-weight on the square inch, for every six thousand feet of depth; so that even at the five-hundred-foot level, which your game has reached in his downward plunge, he subjects himself to extraordinary conditions, and some fishes in coming up, have bulging eyes, and almost explode.

This plunger of the deep sea is a tuna, and to sound and dive deep into the "dark unfathomed caves" seems to be his prerogative; and if all the stories relating to the plunges, mighty struggles and wreckings of tackle could be told, the result would be a tale which would test the credulity of every reader, and to some, seem to demand the *quadragesima* as a penance, as no fish taken with the conventional rod and line reduced to the minimum size by scientific experiments, has made so much history, has been so blazoned around the world.

As these lines are written I receive a letter from Sydney in New South Wales:

"Leaping tunas* have appeared off our shores for the first time in history. Advise me as to tackle."

A letter from Newport states that "the waters off the city are alive with tunas." All of which I mention to illustrate the fact that the tuna is not only a mighty fish, but a world-wide roamer, a swashbuckler of the sea, with a wide field, the waters of the whole reasonable world.

All tuna stories are twice- and thrice-told tales; I wish to

* This was the Australian Tuna, *Thunnus maccoyi*. The senior author was present when the first one appeared. It was caught and it weighed 160 pounds. This tuna has the finlets golden yellow, trimmed with black like the Japanese albacore, but in that there is no black edging.

emphasize this, as nearly every notable catch of the sixty-six men of the Tuna Club, who have taken this fish under the rules (over one hundred pounds in weight), was telegraphed everywhere by the Associated Press, after the fashion of a battle; and a friend, who it chanced was in Paris at the time I made a lucky catch of a very large fish at Santa Catalina, informed me that he read the account the next morning in the French press. The American press in New York had the occurrence illustrated by some occult means the following day, and I had the pleasure of seeing myself pictured calmly treading water and playing a tuna, which was leaping forty or fifty feet in air.

The writer of the account ended it by saying in explanation, that this method of fishing *was* extraordinary, but I preferred it. This is an excellent opportunity to deny this, but I am not going to do it; I really *should* enjoy seeing a tuna leap fifty feet, climb into the air, as it were. But the leaping tuna does really leap ten or more feet, and presents a beautiful sight, as the jump is a perfect curve with no ragged angles.

Tuna fishing with a rod is possible at Santa Catalina, California, because the island affords perfectly smooth water, thirty miles out at sea; in a word, the conditions are exactly right for playing a large fish up to three hundred pounds with a line not much larger than an eyeglass cord, that known to the angler as number twenty-one, meaning that it has that many threads, and will stand a dead pull of forty-two pounds.

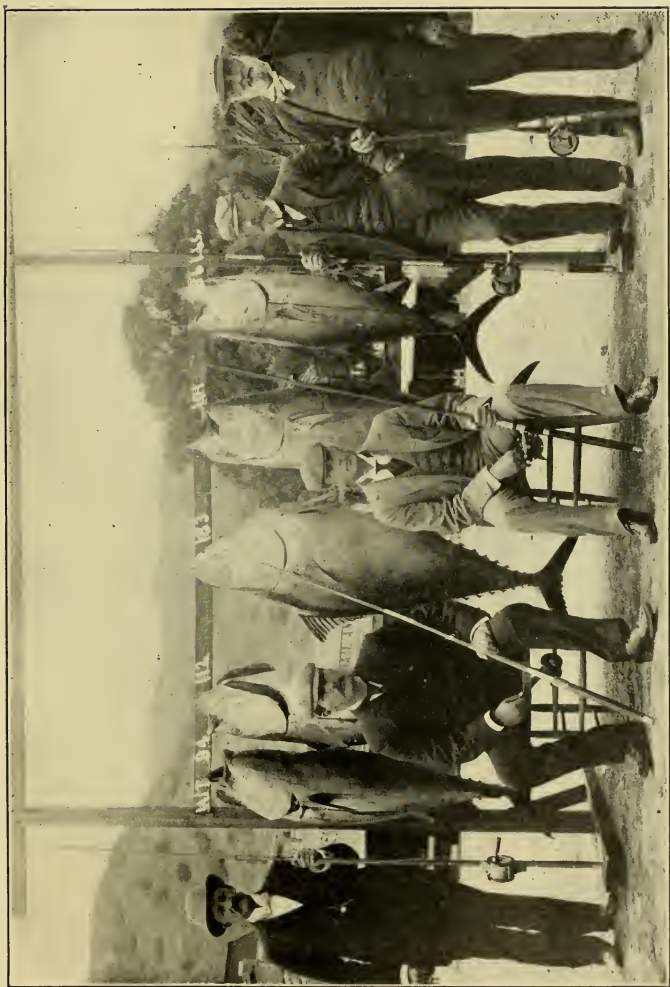
One morning I sailed out into the vermilion-tinted sea, just at dawn. Patience sat at the helm, and expectation crowned the prow, such is the usual custom among anglers; yet we had hardly cast off before the tunas charged into the little bay, and we began to dodge flying fishes, which were in the air, while the tunas were boiling around the boat. Two tried anglers became excited. I knocked a flying fish down as it passed my head, hooked it on to the silver Van

Vleck hook and cast. There was a whirl of waters, spume tossed in air, a frenzied cry of the reel, and two anglers sat breathing hard, looking at one another: one broken rod, two broken lines, all in ten seconds. We had met the tunas, and they had bagged their game.

A member of the Tuna Club was towed twenty miles by a fish; and I have repeatedly been towed four or five, the boatman holding his oars overboard, rowing at times to stop the game. I recall one catch, the incidents of which are so remarkable that does the reader raise an eyebrow and ponder thoughtfully, I shall not take exception, only adding that this is a true fish story.

I had the pleasure of introducing the first rod to the fishes of Santa Catalina, and the experiments they attempted with it, the rods they broke, the lines and reels they devastated, in those early days (1886) was pathetic. In due time I found myself angling for tunas. The Tuna Club, which I founded, allowed a twenty-one-thread line, and a rod weighing sixteen ounces; but I was using an eighteen line and a jointed rod, which I had made for yellowtail, a fish that averages seventeen pounds, and when the strike came the tuna, instead of plunging down and sounding, decided to play me on the surface, and dashed away four hundred feet.

The details of this game at sea are not essential. I played the tuna for forty minutes, then brought it to gaff with my rod slightly buckled. My boatman, Jim Gardner, of Avalon, gaffed it, hauled it in and we were about to give way to exuberance befitting the occasion, when the tuna, as near as I can recall, doubled up, opened out, shot up into the air, and fell upon the rail. As we were standing, we lost our balance, and the next I knew, I was treading water. The boat went down out of sight, then came up bow first, shooting into the air, spilling the oars, gaffs, lines and everything else, into the sea, nearly a mile from shore. I was inclined to take it as a joke, as we had a launch not four hundred yards away; but my companion suddenly announced that he



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THE ORIGINAL MEMBERS OF THE TUNA CLUB.

Charles F. Holder (4), founder, and his record fish. Dr. Macomber (1), F. L. Doran (2), Fritch Dewey (5), Detroit, and Clifford Scudder (3), St. Louis.

could not swim, and throwing his arms about the bow of the boat, she rolled over in a menacing fashion. Jim and I got him in, but the boat still rolled, being light and shallow; so we tipped her over, bottom up, helped the non-swimmer onto the bottom, where, by remaining perfectly quiet and lying flat, he was safe. I then looked for the launch, and noticed that in the excitement I had dropped my rod, a valuable piece of angling machinery.

The launch had not moved, and we saw that the engine would not work; so I decided to leave my companion, as the boat would not hold more than one, and swim to the launch. Gardner was a professional swimmer, and I was fairly at home in the water, having had many capsizing experiences in Florida; but I was handicapped by a heavy, impossible suit of corduroy, leggings and heavy shoes.

The sea was perfectly calm, and I soon distanced Gardner who, I thought, had not been very active about arranging the boat for my companion, nor did he seem to make much headway for a professional. But it was not exactly the time for criticism, and I took it easily, and was perhaps fifty feet ahead of Gardner, when I saw that the launch had started and was coming for us, the men waving and shouting encouragement.

How far we swam I do not know, but my armor of corduroy was deadly, and I felt relieved to see the launch coming. She had almost reached us, and I was slowing up, when my boatman's wife, who was aboard, raised her voice in a scream that made the welkin ring. It suggested sharks to my somewhat excited imagination, especially as she cried, "Jim's drowning." I stopped swimming and turned for a second, treading water, but could see nothing, as my eye-glasses had tipped; when I straightened them, Jim was indeed gone, and way back, seemingly on the horizon, was my angling companion, lying placidly on the bottom of the boat.

I started to swim back, but had not gone five feet, I con-

fess with the fear of sharks in my heart, when Jim's head shot out of water just long enough to grin at me, then went down. As he came up again I shouted, "What's the matter?" that grin having put sharks out of my mind.

"I've got your tuna, sir," and down he went again, to immediately reappear.

I could not believe the evidence of my eyes, and could only laugh as he went down up to his eyes, then pulled himself up to the surface. But he had my tuna, had never released his hold on the gaff in all that exciting turmoil, and had held it with his left hand, helping to turn the boat with his right, and when I suggested that we swim, to give the other angler a fair chance, he said nothing but bore on after me; and when he disappeared the tuna had merely rushed ahead, tried to sound, and had dragged Jim down a foot or two, a clever, and too suggestive imitation of a man being jerked down by a shark.

The launch was now alongside, and Jim threw his legs about the propeller, while I was lashed to the shrouds, as the two men could not for the moment haul me in, the corduroy seemed to weigh a ton; then I was taken aboard.

Jim's entire thought was for the tuna; so I leaned over the stern, the men holding me by the legs, and he lifted the gaff until the tuna's head appeared, when I thrust my hand down into its big mouth, and securing a grip on its gill rakers, gave the word. Heave-o-ohoy! came the chanty. The men hauled on my legs, and I pulled the tuna, and in a few seconds dropped it into the cockpit, when we cheered as anglers will; then Jim was hauled in by a rope which had been tossed him by his wife.

All this time we had kept an eye on the angler on the bottom of the boat, and now steamed for him. He was lying so quiet that one might have fancied he was asleep; but he denied the imputation. The sea was covered with wreckage, and Captain Harry Doss, one of the boatmen of Avalon, who had seen the catastrophe, came out from the

shore and picked it up. A rope was tossed to my companion, Mr. Dennison of Philadelphia, who fastened it about his waist and was hauled aboard. The boat was righted, and with the first tuna of the season we turned toward Avalon, four miles distant, to claim the Tuna Club prize for the event in rods, etc., which of course went to Jim Gardner.

This is enough for the average fish story, in fact, it is as much as the ordinary listener who has his limitations will believe, yet as there *were* three or four disinterested witnesses I will go on. As soon as the launch got under way, I noticed Jim grasping for something, then he cried to the engineer to stop, and stood up, and in his trousers was the hook which caught the tuna; in some way, either during the capsize, or the swim, it had been flung out, and had hooked onto the gaffer. Jim saw that the line led overboard, and to make a very long story short, he hauled in six hundred feet of line, and at the end, up came my rod and reel which had gone to the bottom and slowly unreeled to the end. I have not claimed a Carnegie hero medal for my boatman, but all anglers will appreciate the cleverness and nerve of this man in saving his patron's fish under what, to put it mildly, were adverse circumstances.

This boatman was my oarsman when I killed the tuna which suggested the Tuna Club. I hooked this fish at six-thirty A. M. off Avalon within sight of the hotel. It towed me to Long Point, four miles, where we were capsized, and in and out at least ten miles, and was gaffed possibly not one hundred feet from where I hooked it, four hours later, after a constant fight on my own part without respite; and without the aid of the oars, the tuna would doubtless have towed the heavy boat twenty or more miles, as at the end of four hours it appeared nearly as strong as at first. This fish weighed 183 pounds and was six feet four inches in length, and at that time was the largest and most powerful game fish ever taken with rod and reel. I have often been

asked to compare this tuna to a tarpon, and with high appreciation of the silver king, I think this tuna could have towed and drowned several tarpons of like length.

The big tuna in its *best* condition is simply irresistible, and I have described these catches because they were my own and I have intimate knowledge of the details, but there are over sixty active members of the Tuna Club who wear at times, when they go fishing, a little blue button, showing a silver tuna, which indicates that they have taken a one-hundred-pound tuna, or over, and nearly all of these gentlemen could tell stories which, if compiled, would make one of the most extraordinary series of fish stories ever heard in any land, and best of all, every angler has the consciousness of knowing that he approached the big game with tackle so light that the average layman, on seeing the fish and the line, would class it among the miracles of angling. Judge Beaman of Colorado was towed by a tuna over twenty miles. Mr. Wood played his tuna seven hours, then unable to fight longer he gave it up, and his boatman, Harry Elms, took the rod. This contest was waged from five to ten miles from Avalon. The boatmen of the latter place took excursion parties out into the Santa Catalina channel to see the contest with what was supposed to be the largest tuna ever hooked.

The members of the Tuna Club sent lunch out to the boatman, and a committee of the club stood by him hour after hour. Elms fought the tuna seven hours; and even estimating that the boat was moving only two miles an hour, here was twenty-eight miles altogether, in and out around and around, the tuna boring down, sounding deep in the heart of the channel.

At the end of fourteen hours Elms brought the game to the surface, when it was seen to be a monster. But the fates were against him, it was lost at the gaffing. On feeling the gaff the splendid fish made a downward rush, the wire parted, and there was nothing but the story left, though

a giant tuna was seen dead on the surface by a passing steamer some days later.

Some of these erratic and uncertain fishes, which appear at Santa Catalina for four or five years, and then almost disappear or refuse to bite, are very disappointing in the face of the experiences of certain anglers, but I believe this to be the exception, and that such fish are weakened from spawning, or are caught with heavy lines on billiard-cue-like rods, all of which tends to take the life out of a fish. But the "blue tuna," in its best form, is the strongest of all fishes, pound for pound, inch for inch.

As all the remarkable tuna stories are immediately exploited by the press, they are all, as I have said, twice-told tales, but possibly the following is not known outside of the Tuna Club.

When a new angler appears at Santa Catalina when these fish are present, he feels something like a man before a battle. He wonders how he will stand it, and as he falls in with several heroes of the chase the night before, at the Club, they do not fail to dilate upon the terrors of the sport, and the awful experiences of the men who have met the big tuna and failed, who, in truth, are legion.

One day a well-known gentleman, now a director in the Club, and a skilled angler, arrived at Avalon. He had heard the stories, and was told many more, and doubtless considered that he was approaching a crisis in his career, and nerved himself for the struggle. The time came, he hooked his tuna, when, to his amazement, far from making the struggle of his life, the giant fish tamely followed in, and in less than two minutes was alongside. His boatman gaffed it, and hauled it aboard. For a second the amazed angler stood, the most astonished, outraged and deceived man in all Southern California. Then with a wild leap the tuna began to wreck that boat, and it is said by those who were present, that the fight in the air was one of the most remarkable on record. But the boatman finally won, and

then it was found that the angler had *snagged the tuna in the eye*, and doubtless had so paralyzed the fish, that it came in like a lamb and did not recover until it was gaffed, and the hook was removed. This genial angler, philanthropist and yachtsman, still holds the record in the Tuna Club, as the angler who took his tuna in the shortest time,—about two minutes,—and the record probably will never be excelled.

The rush of the tuna produces in some men a condition akin to buck fever, and “tuna hospital” is a term which appeals to certain anglers after their first fish. I have seen men with lost finger nails, bruised and smashed knuckles, hands cut to the bone with hand lines, and the big tuna may well be placed in the category of dangerous fishes, as it can easily jerk a man overboard. In the report of the Canadian fisheries an authority states that the fishermen at the mouth of the St. Lawrence hold the big albacore, as the tuna is called there, in high respect, as it has been known to jerk men overboard. When it is understood that the fish attains a length of ten feet and a weight of one thousand pounds, the possibilities in this direction can be realized.

All the large tuna-like fishes, the so-called blue tuna, the yellowfin tuna and the long-finned tuna, plunge into the deep sea and try to sulk like a salmon when hooked, the bonito or skipjack being an interesting exception; it alone plays on the surface, hence is highly esteemed by anglers.

The tuna, yellowfin or blue, is a very uncertain game. For five or six years it will play havoc with rods and lines, then, with no satisfactory excuse, it will stop biting, and wage war against the patience of men. In 1907 I saw thousands of leaping tunas of large size in their haunts from Avalon to Long Point. I tried every device known to sea anglers, but failed absolutely, and during the entire season but six or seven tunas were taken, and none over one hundred pounds.

The yellowfin tuna is just as peculiar. One season (1906) five hundred were caught with rod and reel; the

next year many more were about, but few were taken. Yet it is this very uncertainty that makes angling the sport of sports. If one could always land a tuna, or a gudgeon, there would be few anglers.

As this volume is going to press I have received from Herbert St. A. Earlscliffe, of Santa Barbara, California, one of the most skilful anglers of the Tuna Club, who has fished all over the world and paid especial attention to the leaping tuna, many large specimens of which he has taken at Santa Catalina, a most interesting letter dated at Mustapha, Algiers, addressed to his fellow members of the Club, describing the tuna fisheries in Sicilian waters, which I give herewith, knowing that any additional data relating to this fish will be read with interest by anglers all over the world:

“31 December, 1907.

“Tunis, tunny, tuna. Sounds reasonable, don't it? I mean the connection. Anyhow, I started to investigate during a recent pleasure trip through Sicily and over to Malta and Tunis, and if any of our tuna enthusiasts are interested in the results, here they are. To begin with, tunny fishing over here is not a sport, it is an industry, and has been since 'the memory of man runneth not to the contrary,' and of such magnitude and importance that not long ago a governmental commission was appointed to investigate and report on the advisability of its being taken over and made a government monopoly. Under such circumstances one would suppose that everything knowable about these fish would be 'on tap,' yet I find the opposite is the case and that information is scarce and often contradictory. What I give below has been gathered on the spot from sources that should be authentic, and has been confirmed several times.

“First in importance to the Catalina fishermen is the fact that the tunny and the tuna are one and the same (a sort of horse mackerel) as can readily be seen in the illustrations.

It is stated that in Sicilian waters the fish sometimes reach a thousand pounds in weight. Think of that, Mr. 'Light-tackleman,' but last year the largest taken weighed but six hundred and fifty pounds and was presented as an offering to the shrine of St. Sebastian, the patron saint of Sicilian fishermen. The fish usually enter the Straits of Gibraltar in April, and are soon after seen off the Balearic Islands, and towards the first of May reach Sicily. It is then called the 'tunny of arrival,' and here the main school seems to split into three. One going south to the Tunisian coast, and thence on to the Adriatic, and a few as far as the Bosphorus. Another branch school, apparently the largest, follows the northerly coast of Sicily, on through the Straits of Messina as far as Syracuse, while the third branch strikes north to Sardinia. As at Catalina, their arrival is irregular, in some years early, some late, and some years not at all. Often they are preceded and followed for a fortnight by young fish of from twenty to fifty pounds. After July they practically disappear, except for occasional specimens that seem to remain the year around. From July to October they are taken in much smaller numbers off the coast of Spain, and they are then called the 'tunny of return'; but where they originally come from, or finally go to, is answered in the rather large terms South Atlantic and North Atlantic. Nor can I get positive information as to why the fish follows such fixed lines, whether to spawn or no, or where the fry are reared (none are ever taken apparently), or whether it is that they only follow the vast shoals of sardelles, 'palamita' and 'sgamirro,' on which they feed (instead of the flying fish as at Catalina).

"It is impossible to convince the Sicilians that the tunny can be taken with rod and reel, and indeed it does not appear to ever have been done there, though heavy handlines are sometimes used. The native, aside from his constitutional dislike for labor, is too much interested in it as a bread and butter proposition to think of the sport, and even among the



WILD SCENE AT THE TUNA NETS, SICILY.

The Tunas are trying to escape, and the men are gaffing and spearing them.

officers of the British garrison at Malta, the idea seems unknown, or at least undemonstrated, and there is a profitable field for some of our tackle manufacturers to go there and teach them the trick.

“When the tunny are expected, nets are put out, watchmen stationed, boats and canneries made ready. A general fiesta is held, and invocations and bribes offered to saints to bring a good season. Motor boats, or launches, have not been introduced yet. The nets are enormous affairs, some costing as much as ten thousand dollars, being miles in length and of varying depth from fifteen to fifty feet. They are placed at strategic points along the coast and serve to guide the fish into the corral net or ‘camera di morte,’ as it is called. Strange to say, the tunny always turns to the left when meeting these obstructions, and this trait has given rise to the curious idea that it is blind in one eye. At any rate, the openings in the nets are arranged on this principle, and men in a small boat watch to see when a sufficient number have entered, then the entrances are closed and the large boats draw up and haul in the net, spearing, clubbing and gaffing the huge fish who churn the water and drench the men with the bloody spray, as can be imagined by looking at the illustration. Of course the corral net has a bottom and is very strong, to resist not only the tunny, but also the sharks and swordfish that occasionally enter with them. After the slaughter is complete, the nets are replaced, and the loaded boats (two hundred fish are often taken at a haul) go to the canneries on shore, where the tunny is speedily cut up, cooked and canned, and afterwards shipped all over the world. Large capital is invested in the industry, the value of the nets alone running into the millions of francs; and one concern—the Florios—are said to clear two million francs in a good season at their plant near Trapani.

“For any one wishing to enjoy the sport of taking the tunny with rod and reel, *à la Catalina*, I offer the following suggestions: Make Palermo your headquarters. It is a de-

lightful place and in May is at its best. Mr. Ragusa, the proprietor of the principal hotel, is a pleasant contrast to most European landlords in that he takes a personal interest in his guests instead of leaving them to the concierge. He is also a naturalist and collector of repute. Mr. H. Pernull, the genial tourist agent there, is another whose acquaintance should be cultivated. He is an archæologist and author in his leisure moments, and is thoroughly familiar with Sicily and its people. Between these two, the visitor will have no trouble in securing the best boats and boatmen, information, letters of introduction, permits, etc. Of course, a complete tackle outfit should be taken along, as nothing of the kind can be procured in Sicily, or Europe either, I dare say. As the fish often run to such great size, there would necessarily be a lot of smashed tackle—hence my advice is to take plenty, a triplicate outfit at least. Palermo can be reached easily from Naples by boat or train, the former being but a night's passage and if moonlight, will never be forgotten.

“It will be a great disappointment to me if I am unable to be on hand next May to try to be the first to take a ‘button tuna’ in those waters. Great glory awaits the man who first demonstrates the possibility, besides grand sport, and should I fail, my hope is that some member of the original Tuna Club may turn the trick, and so shed additional luster on this, the parent organization.

“HERBERT ST. AUBYN EARLSCLIFFE,
“Santa Barbara, California.”

I wish to emphasize the fact that the tuna (yellowfin and leaping) are the most unreliable of fishes, and no one should go to the island of Santa Catalina, at least from England, France, or Germany, or even from New York, expecting to make a sure and positive catch, as the chances are that they will be disappointed, so far as the tunas are concerned, but not in the many other large fishes found there—as compensations. Mr. Earlscliffe says in his interesting letter that

the tuna is uncertain even in the waters that have known it for centuries; "their arrival is irregular, in some years early, and *some years not at all.*" This is exactly the situation in Southern California. Tuna bones in the mounds show that the big fishes have been coming here for centuries, for thousands of years doubtless, but being a wandering fish they form in big schools, and like an armada, visit various parts of the ocean. From 1886 up to 1901 they were seen in vast numbers and for several years afforded fine sport to men who like hard work and big game; but even then they were erratic, and stopped biting without warning, about August fifteenth, and did not appear until June fifteenth. Some years but a few appeared, and in 1907 I saw scores of the largest tunas in their old grounds at Long Point. They swam about, acted just as they did when they were affording good sport; but nothing could induce them to strike, though my boat passed through swarms of them not five feet distant. Who can explain it? No one has succeeded so far. In 1906 the yellowfin tuna appeared up to seventy pounds, and afforded splendid sport with the rod. Dr. Jordan stated that it had never been reported from American waters before, hence was a new game fish. The next season, 1907, they came, but few would strike. I fished for them day after day, saw scores not ten feet distant, taking "chum," taking everything but the sardine with the hook in it, and confessed that I was not sufficiently clever to hook one. And this was the experience of scores of anglers. In 1908 they may disappear entirely or may come back and bite.

To old and experienced anglers of trout streams or the ocean these remarks are unnecessary, as they know full well that the charm of fishing lies in the uncertainty, and that all sport *is* uncertain, but the writer does not wish to be the means of inducing any one to cross the continent or the Atlantic and be disappointed in fishing in California because the much-talked of tuna do not arrive. And so he reiter-

ates that all over the world nearly all fishes are fickle and uncertain, and the two tunas mentioned particularly so; hence, no angler should go to the grounds feeling sure that he is going to bag the great game. They may not appear at all; they may be seen in vast numbers but will not bite, or individuals may be seen and hooked even in winter, or again, they may suddenly come in from the south, or the great unknown and afford the famous sport that is in a class by itself. He who goes tuna fishing should possess himself with patience and be fortified in advance for disappointment. But if the tuna fails there is compensation in the splendid game fishes of California which have no counterpart anywhere, as the yellowtail, seventeen to seventy pounds; the white sea-bass, up to eighty; the black sea-bass, four hundred pounds; the long-finned tuna, or albacore, up to sixty pounds—an unfailing game and sure many months in the year; two bonitos, salmon, a swordfish, besides many small fry—all compensations for the non-appearance of the famous tuna, that at any time may, without warning, pounce upon the unsuspecting angler and rend and harvest his tackle.

Those who do not understand the conditions believe that the tuna has left its haunts forever, but the writer has disproved this, and according to old fishermen, the tunas of California have always been addicted to this uncertainty of habit, coming and going in uncertain cycles. This sport gave rise to the Tuna Club, whose object is to elevate the standard of sport by insisting upon the use of light tackle for the largest fishes, giving splendid and valuable prizes. The clubhouse of the Tuna Club of Avalon, Santa Catalina Island, stands on a pier built out into the bay of that name. It has all the conveniences of a clubhouse, a large living room where the famous record fishes of the club may be seen, and its cups and trophies. There is a large locker room for rods and gaffs, a roof garden above, a private landing. The club has a membership of over three hun-

dred, among them some of the best known anglers in America and England. It is not a club to encourage fishing, strange to say, or to make the sport comfortable, but to discourage the taking of numbers and to make it as difficult as possible. Thus, every man of the sixty or more who has taken tunas of over one hundred pounds in weight, caught them with twenty-one-thread lines and rods weighing not over sixteen ounces, about the same kind of a line that many anglers use for black-bass. In a word, the members set the example of the highest possible standards. The game has the entire advantage. For fishes up to sixty and seventy pounds, the Tuna Club uses a nine-ounce rod and a number nine line, and for fishes up to thirty pounds it uses a split bamboo specially made rod, weighing six ounces, and a line known as a number six, a line smaller than any trout line in use. The latter feature belongs to the "Three Six" Club, an adjunct of the Tuna Club, and as these lines are written the writer has qualified for membership (an amiable weakness) in this little club of seven members, by taking an eighteen pound yellowtail with the tackle described, succeeding on the third fish. The first took seven hundred and fifty feet of line and it doubtless broke of its own weight. The second ran into the kelp, but the third was hooked well offshore and was brought to gaff in about an hour, the difficulty being that the slightest overstrain will break the thread-like line, that is only tested to a breaking strain of twelve pounds.

This movement which may be termed philanthropy in angling, has extended to many places. The Aransas Pass Tarpon Club has been founded on similar lines, and the motto of the "Three Six" Club, "More sport, less fish," will be heard around the world. The time came long ago when anglers should earnestly consider the conservation of the oceanic resources of America. Already the lobster, striped bass, and others have almost disappeared, and the normal situation can only be reattained by the action and ex-

ample of the members of the Tuna Club and others, whose motto is to elevate the standards of sport.

The work of this club at the island of Santa Catalina, in all probability the most famous sea-angling resort in the world, owing to its large fishes, has been striking, and there is not a boatman out of the scores who will allow his boat to be disgraced by the methods of the "fish hog." Every man's motto is light tackle and fair play to the game—an example that is far-reaching—as the lesson is learned by over 50,000 people who visit this locality every year, and many of whom fish and fish according to the rules of the tournaments of the Tuna Club held between May and October every year.

CHAPTER XXXIV

THE WALL-EYED PIKE



NE attraction of the great river of the north, the St. Lawrence, is its infinite variety and the impossibility of exhausting its many charms. The term, Thousand Islands, doubtless does the great river an injustice, as there are many more. I have never met any one who knew how many islands there are, but every one knows their beauty and endless variety. They range in size from one just large enough to step upon, to almost principalities, like Westminster. I know a little one not far from Clayton, just large enough to cast from, and to hold your fire and camping outfit. I know this, as on one happy day I lured a big bass from this region, a fish that had been whispered about, season after season, like the big tarpon of Aransas, with scales as large as dinner plates and the eye of an ichthyosaurus.

Indeed, the most exacting collector of islands can be suited here, as they are of all kinds, sizes and conditions of servitude; no monotony here, as each has its peculiar charm. Bill had a name for them all, and a little story to tell of this one, where some old *voyageur* fished or camped, fought or died. Indeed, there is a world of romance about the islands which has never been exhausted, nor can it be entirely killed by the modern man with a megaphone, who personally conducts the summer tourist through these isles of enchantment and makes and unmakes history with brazen tongue and adamantine assurance.

On my way home one afternoon, when Bill was rowing slowly and we were drinking in the splendid colors of the

sky and foliage reflected in the clear water, we passed the entrance to a little bay that was so alluring that we turned in and skirted the shore, passing a little cape where great masses of a single-petaled, deep-pink wild rose grew fairly in the water and sent their fragrance broadcast. Here I had a strike and into the air went the bass, flinging my hook ten feet along the waters. I glanced overboard thinking, hoping, to see him, and just then the skiff passed over a singular heap of stones, a miniature mountain, though possibly too artificial, too symmetrical. Bill stopped and held the boat while I examined it; a heap of stones four feet high, nearly all about the size of an English walnut, though one I reached was larger and weighed several ounces. I first imagined it the ash dump of some launch, but we had come up a very devious and narrow channel, and no launches had ever profaned this charming spot.

As I stood up I perceived another mimic mountain not fifty feet away, and as we hunted about I located four, or five, and concluded that I had found the mountains of the fishes. Bill said some kind of a "critter" made them. Another guide later told me that he had seen black bass on them; another was willing to make an affidavit that the mountain, which was eight feet or so across the base, and must have weighed a ton, was made by catfishes. In truth, I could not find a guide who knew what the heaps were, yet several said that the piles or miniature submarine mountains, grew every summer, and when the river froze the tops were frozen in, and when the breakup came in the spring, the ice would carry off the top.

The piles of stones were made by a species of chub, the silver fall-fish, a fish which I had several times taken on a fly when trolling, and which made a very clever fight; but the chub is not edible, at least to the average man. Its mouth is on the under side, too suggestive of mud and sharks as a regular diet, yet very conveniently placed for building miniature mountains, and every stone was brought

there and dropped, by a fall-fish, in a long time producing the heap. In the interstices the eggs were deposited, and later I frequently saw the fishes lying on the slopes of the mountains of their making.

These lakes, bays and miniature fiords were charming places to observe the habits of fishes. In this same watery Eden I found beneath the lilypads the nests of the sunfish; a little clearing not as large as my hand, covered with gravel, where the pugnacious male stood guard. Indeed, in one instance I found that I could not drive the fish away from the nest by reaching down; it stood its ground until I almost touched it. Not far from here I found later the nest of the black-bass, along the same lines, though the clearing was larger.

Every day we took a different route, meeting our friends at some beautiful spot, some island not discovered by the world at large, where we dined sumptuously, under the cooking of the guides, and exchanged experiences of the day, compared the colossi, weight and length, and disputed them inch by inch. One morning we rowed down the stream to where a little river hardly wide enough to admit a boat separates it from Murray Island, about four miles from Clayton, forming a little island abounding in forests and inland ponds. In a maze of trees, vine-clad, I came upon a deserted house, about which we built up a deep unfathomable mystery, and it would be very hard to convince me that it was not haunted by some cheerless yet altogether delightful ghost. One night when passing, I heard the dismal hooting of an owl from its inner gloom, and strange lights were drifting about, which might have been flambeaux in the hands of ghostly *voyageurs* of long ago. It is true that the lowland here was famous for its *ignes fatui*; but the ghostly interpretation appealed to me the most.

Near the little separating river, from the mouth of which we looked off into a broad bay to other and distant lands, I found some remarkable potholes, but they were eight or

ten feet above the water, and how they were formed was something of a mystery. Possibly, they suggested the river level long ago, or had been made by Indians.

There was a little trail leading across Murray Island, which finally joined a trail on the east side, skirted the island and led to an inn and civilization, and the charms of this elysium after half a day on the skiff cannot all be enumerated. There were banks of daisies and other wild flowers, pastures given over to blueberries, rich and good; hollows of brakes and ferns, wild strawberries, picturesque vistas at every hand, where the clear and beautiful river could be seen through the trees. The colors here always seemed marvelous to me, they were so rich, so clear and pure. On one side of the island a mass of wild roses blocked the landing; growing almost, and in some cases, in the water; big single-petaled flowers, redolent with fragrance. Here we found old friends with their cottage and camp, boathouses and all the appurtenances of modern summer life. If you went to call on the clergyman who had taken three muskallunge, you went by boat. It was a sort of Venice, with St. Lawrence skiffs for gondolas. The grocer came puffing around in a skiff with a two-horse-power engine. The milkman rowed over from his island dairy, and one day I went down to the dock to extend a welcome to a boatman, and ye gods and fishes! he was a book agent. There was nothing lacking in this harbor of delights.

Bill had promised me a wall-eyed pike on a fly, and one evening when we were rowing along the north side of Westminster, not far from the Canada shore, he backed the skiff up to a rocky point where there was deep water with a perceptible current, and I began to cast. I was using an eight-ounce, ten-foot split bamboo, my short black-bass rod which had been tested on a seventeen-pound yellowtail in California in an hour's contest, and one of Andrew Clerk's famous St. Patrick flies from a lot he had given me in one of our many days' fishing, an irresistible dainty, which I

dropped a foot from the cliff and allowed to drift dry fashion, then cast again around in a circle until the fly sank, allowing it to go down a few feet.

It was just at dusk, the very hour for the big nocturnal perch, and I had just lifted my tip when something struck, *bang!* I was not expecting such luck, for I had been trying for this fish for days in different parts of the river. At first I thought the steady strain was suggestive of a pickerel, but when thirty feet of line had been forced from the reel, the fish began a peculiar jerking or hammering on the line which kept my rod nodding, reminding me of the Chinook salmon in Monterey Bay, which often gives you blow after blow.

It was some moments before I could stop the fish, as it had made for deep water, and taken us out into the stream, but when I reeled it to the surface how it tugged and pulled! shooting from side to side in gallant fashion, its glassy eyes flashing, altogether a game fish of goodly parts. In about ten minutes I had it alongside and Bill netted my first wall-eyed pike, one of the epochs in the life of at least one angler. It was a darker, richer green than any I had seen, doubtless due to the clear cold waters.

The fly being unsuccessful on a second trial, I tried a minnow in the dusk and caught three fine fish, and doubtless could have lured others in the darkness; the largest weighed four pounds, and the smallest two and a half.

In my experience, this fish is not a common catch in this part of the river, and is found only in deep and rocky places, where the water is cool and clear. I never saw one which would weigh over five pounds, but I have heard of individuals ranging up to thirty pounds, and even more.

One day in following along the shores of La Rue, casting and trolling, I took a pickerel with a fly. To my amazement, it went wriggling into the air, as I am told big muskallunge always do, dropped, and with a swing, threw itself around on the surface of the water and then took fifty feet

of line in as clever a straight-away run as I have ever seen. It has been my fortune, my luck, to catch a number of these logy cousins of the battling muskallunge, but in a long and active career, this was the only pickerel or pike that made a good resistance, not exactly redeeming the tribe, but showing the latent possibilities when really awakened. It is possible that this logy nature of the pickerel is due to the method of capture. One of the best fly-casters I have had the pleasure of fishing with, Mr. Alfred Beebe, of Portland, Oregon, assured me that the rainbows of the Klamath would not jump, and apparently soon gave up when taken with that barbaric but sometimes necessary contrivance known as a spoon, the reverse holding with a fly.

CHAPTER XXXV

MY RECORD MUSKALLUNGE

The Judge: For two years you men have fished together peaceably, and yet you wrangle over this fish.

The Sportsman: You see, your honor, this is the first time we have ever caught one.

—TRANSATLANTIC TALES.



F all the regions in Canada that lure the angler in summer days, none has a greater charm than the fair, smiling river, the St. Lawrence, and its contiguous country to the north. Here we have an angling Venice, a river of a thousand islands, reaching from the Great Lakes to the sea.

So filled is the St. Lawrence with islands that its actual size is rarely appreciated. In its narrowest part, it is one of the great rivers of the world, and from below Montreal, where it widens out and reaches far to the north through that deep, silent estuary, the Saguenay, it becomes a sea in vastness.

Into it many salmon streams flow, and reaching it indirectly, connected by brooks and streams, are myriads of lakes, from St. John, the home of the ouananiche, to the famous black-bass and muskallunge lakes and streams of the west.

I know it well from Kingston to Chicoutimi on the Saguenay, and where the Thousand Islands, like gems, stem the tide, each an emerald in a setting of ultramarine, and of such variety and beauty that its oldest habitués find new charms year after year. No stream has water more pure, more perfect in its aëration.

Has not some of it rushed down from the great chain of lakes, bounding along, a thing of life and beauty, to leap the falls of Niagara, then, pressed into narrow confine, a bubbling, swirling mass of foam filled with air globules, torn, rent and tossed by hidden rocks, breaking away to join the placid and gentle river of the north? Where can such water be found, so well prepared, so filled with the very essence of life to bass, muskallunge, pike and perch? Little wonder, then, that these fine game fishes are found in its limpid waters about its rocky islands, lying in the deep channels, or venturing into the land-locked bays where birch and pine are reflected in the mirror-like water, when not covered with mats and draperies of pond lilies.

Probably these isles of delight have been counted and mapped, but those who know them best prefer to know them least, so far as exact knowledge is concerned. They would rather come upon them every year from different points and so garner new joys, fresh surprises, and in this lies one of the peculiar fascinations of this region, where one may fish from his back window, where the days are a succession of pleasures. I know the country best in its very heart opposite Alexandria Bay, and when I first found it, years ago, islands were not at a premium and but a few cottages were to be had. To-day doubtless every rocky isle has its owner, and nearly all bear the summer homes of dwellers from far down the States and from the uttermost parts of the Californias.

Our camping island of Westminster is in midstream, surrounded by many others. It is high, it is low; it has hills and lofty cliffs; it has pleasant beaches upon which the gentle waves lave and laugh as they break; and it has abrupt cliffs of rock which breast the channel, against which the waves in storms dash, tossing the spray high in air, to fall in crystal drops upon flowers and green trees.

In one direction we see the broad stretch of river and Canada beyond; in another, a field of daisies. The forest,

as each island has its trees and all the factors of the mainland, is indeed a province. Some of the islands are mere rocks, like Little Fraud, near Haydens; yet it has its trees, its cottage and boathouse.

Others, like St. Elmo, rise high and rugged, covered with verdure except where the grass sod reaches down to the water in some quiet cove. Nobby Island, despite its name, is one of the most typical and restful in its beauties. Then there is the Lake of the Isles, near Westminster, seen from nearly every point, often through the vistas from the meadows, or again from some lofty point, or come upon suddenly when rowing around some rocky ledge.

Here are endless shapes, each a perfect island, an ideal stopping place which the angler or rower hails with delight and leaves with regret. Here all nature is beautiful, and one is at a loss to select one spot more attractive than another, though I have found it a question of moods. To-day, one finds more delight in some little bay almost entirely shut in; where the pond lilies cover the water and the boat may be hidden with blossoms. Again some lofty isle takes the fancy, where one can lie beneath the trees, fanned by the soft wind, breathe the perfume-laden air and dream of the *voyageurs* who knew this region years, aye, centuries ago, not one of whom has carved his name upon a rock.

But you and I are not dreamers, at least do not confess it. We seek the river, not for the beauties of nature alone but to try conclusions with the finest of all game fishes, the black-bass, which long ago preëmpted this region and called it its own, with none but the muskallunge its right to dispute. Pope must have had in mind a similar stream when he wrote:

“Our plenteous streams a varied race supply:
The bright-eyed perch, with fins of Tyrian dye;
The silver eel, in shining volumes roll'd;
The yellow carp, in scales bedropt with gold;
Swift trouts, diversified with crimson stains,
And pikes, the tyrants of the watery plains.”

We have been thinking, dreaming about old fishing grounds all winter. The stories of the famous bass caught in the eighties has been told threadbare and has grown and expanded under the telling until we have not the face, though we firmly believe it, to tell it again, which is another reason for going fishing, to restock the memory and obtain new records. Then what companions there are to meet! There is old Joe, who first told about the deadly qualities of a certain fly, and who brewed the famous brandy punch said to be concocted from a description left by Walton himself. There is T——, who hooked a minnow, which was taken by a yellow perch, which in turn was swallowed by a four-pound black-bass, which was seized by a muskallunge, all being landed.

We wonder if the old boatman is still on the river. All this, and more, constitutes premonitory symptoms of the summer fishing; and so the days creep by and the tackle is looked over. A new split bamboo rod is bought. It weighs about five ounces and is nine feet in length. New silk lines are added, as the very act of buying tackle is a legitimate factor in the sport, which one would not miss, though you or I would not confess that sometimes anticipation has constituted the whole bag.

The happy day arrives; we are off. A man in our car has a rod strapped to his sticks; he, too, is going down the river. We try the old bass story on him, but he has one to beat it, about a bass caught at Gananoque, which is in Canada; so we still hold the record, the American record, for our part of the river. At last we stand on the beach; the old boatman is waiting; he has the cleanest boat, the freshest minnows and the jolliest smile of any man on earth, and as we have seen him come in a hundred times, never without a bass, we know we are going to have a day of sport.

The St. Lawrence bass boat is a type peculiar to the river. It is of natural wood, copper-fastened, oiled until it shines,



SHARK SEIZING THE CUTWATER OF A BOAT.

See page 215.

and so nicely modeled that it is a thing of beauty, graceful, buoyant, on the water. It is just long enough to hold three persons; wide of beam, a good sea boat for the St. Lawrence, yet so light that one can easily haul it ashore, and with such perfect lines that a woman can row it. In the stern is a cane-seat chair, which revolves if one wishes; opposite it another, your companion and you facing each other. Your feet rest upon a rug of Brussels carpet, and the boat is so immaculate that it would seem a mortal sin to land a fish in it.

Behind the midship angler sits the boatman, who knows where all the bass are stationed on this happy river; who is to row you to all the famous rocks for thirty miles along shore, entertain you, bait your hook, discuss all questions pertaining to the river, if desired, and at one o'clock sharp, on some fair island, cook and serve a fish dinner fit for the gods. This very prodigy is behind you and he laughs and says, "Yes, sir," when you ask, "Plenty of fish, Bill?" Then you remind him of that big catch you made, and work in that same old bass story, now so mature and so large that Bill looks a little grave at the number of pounds; but he recalls it when he lights one of your cigars, and assures your companion that it *was* a great fish, in fact, a "corker."

Bill sits on a low, broad seat beneath which is a drawer, that, when pulled out, is seen to be lined with a rubber bag which can be taken out and washed. In this receptacle are stowed the fish as soon as caught. In front of him is a box of tackle, and on the side an extra split bamboo or two, a landing-net, and a gaff for the mighty muskallunge. Forward a galvanized minnow pail, two canvas seats well folded, and well up forward, carefully covered, the lunch. Such is your fishing boat, as dainty a craft as floats.

Bill's face is protected by a Canadian straw sombrero that never paid duty, decorated with a number of bass flies, with a flavor of last year's bait. Once well out from the landing you join the new split bamboo, reave the silken line, and

Bill catches the leader and impales a minnow. You notice that he does this very carefully, so that the fish is not tortured, which makes you think more of Bill than ever.

All is ready. The sky just slightly lowery, not suggestive of rain, but a warm, dreamy day. The sun has been up over the horizon only twenty minutes and the wind has not risen, the great stretch of river, running rapidly in places, almost quiet here. Bill heads for the east and announces that he will try the shores of Grenadier, as you have agreed to meet a number of other boats at a certain island for a fish dinner at noon.

Bill has a weakness—he is fond of stories and has been snowed in all winter; this is his first pull, and as he puffs the fragrant cigar which you picked out for him in Montreal, he says:

“I ’spose you haven’t heard any new stories, sir?”

“Give him ‘Aunt Jane,’” laughs your companion, and Bill moderates his stroke while you tell the story that is several months old, but new to him.

Your boat glides along the rocky cliff, your rod out to the left, your companion’s to the right, the tip bending gently in a suggestive manner, the speed of the boat being so regulated that the minnow moves along two inches below the surface in a manner at once natural and nonchalant. There is positive delight in this gentle art, which Walton loved so well, as followed in these waters, as, did not the bass bite, the eye is constantly regaled with never-ending change of scenery.

The boat follows the undulations of the island; now in a quiet bay where the sunfish makes its home; now facing the broad reach of channel toward the Canada side, and always within a few feet of the shore, as the bass affects shallow water or shoals. Now we skirt an island scarcely large enough to alight upon, and as the boat passes on, *zeeee-zeeee!* screams the silver reel in protest, deeply bending the slender rod, and something is away with the St. Patrick fly.

Surely no small-mouth bass could make so desperate a rush, taking thirty feet of line; yet into the air it goes, the sun flashing against its sides, dropping with a crash to again make a savage rush.

Zee-see! cries the reel again, "stabbing the soft air with its shrill alarm"; the fish now rushes in, while the little reel eats up the line, stopping to fling itself into the air in a paroxysm of rage or fear, shaking its massive head and, *en route*, showing the blood-red gills, to drop and speed away in some direction with a rapidity and fervor that have often demoralized the tyro, broken his rod and left him speechless with amazement at the suddenness of it all.

The boatman is deftly keeping the stern to the fish, now whirling it about with a violent jerk at the delicate spoon blade, as the bass seems determined to encircle the boat, or holding it stationary, or backing water as it makes a clear-away rush astern with a spring into the air every ten feet. How the reel screams *zee!* Now giving out fitful notes telling of sudden jerks or sturdy blows, ending with a long shrill cry as the game breaks away and plunges for deeper water or some rocky vantage ground which perhaps comes into its memory in this time of dire need.

But slowly the deft reel eats up the line, and the fish comes in, now swerving grandly, bearing off bravely, leaping still with spirit, never indicating by move or gesture that it thinks of surrendering; always pugnacious, fighting against the inevitable.

Such a bass I have seen tow a boat around, bending the rod nearly double before it could be brought to net. Slowly it comes in; now circling the boat, and at the surface careened away from you, bearing off gallantly, ready to take advantage of the merest slip on the part of the angler. At such times the delicate line has been known to kink despite stretching, and to loop itself around the guide with satanic ingenuity, or in some mysterious manner catching the handle of the reel.

The bass desires no greater favor than such a catastrophe, and as it feels the firm resistance it plunges off to liberty, bearing off yards of streaming line as a reminder of the experience—a silken decoration telling of its valor.

But our bass has not escaped; it is slowly coming in; now essaying a final leap, then is passed forward to the boatman, who at the right moment slides the net beneath the fish and lifts it in. Here is game indeed. Even the boatman expresses surprise and admiration, and when he weighs the fish and pronounces it a five-pounder, all the amenities are observed.

There is a singular unanimity of opinion among anglers regarding the black bass. The one who has distinguished himself with tarpon or tuna, the “high hook” of the salmon fly anglers, the enthusiast over ten-pounders—all, or nearly all, after dilating upon the famous game fishes they have caught, will in confidence tell you that the small-mouth bass, after all, is the delight-giver of greatest excellence; at least I have heard the confession from many anglers of high degree, and have arrived at the same conclusion after having caught nearly every game fish that swims, running the gauntlet from striped-bass to tuna and from tarpon to trout, and this is not to the disparagement of other fishes, all of which have their peculiarities.

For nearly twenty minutes the bass has played us, and now packed away in the drawer, we row on down the river. Near this point that stands out so boldly and rises from deep water, I once came upon a colossal bass. There were perhaps six swimming around slowly in a circle, so near the surface that their tall, erect dorsals extended above it and cut the water as they moved along. My companion cast into the school and one by one took four, weighing five and a half, four, three and a half, and three pounds, in succession, each fish playing fifteen or twenty minutes and affording splendid sport. Around this point the reel gives tongue, and one rod lands a large yellow perch, while the

other struggles with a pickerel that lunges at the surface, makes several runs, then gives up in disgust, the very antipodes of the bass in its play. As we approach a submerged rock the boatman foretells a strike and is a true prophet.

Zee-zee! goes the reel, a different note than that made by the small and more insignificant fry just landed, and high out of water goes the valiant bass, shaking itself in midair and throwing the hook several yards. *Zeee!* sings the other reel, lengthened sweetness long drawn out, as the game fish seeks deep water, running out over one hundred feet of line before it can be stopped, then playing with the delicate rod, twisting it into a bow, and demonstrating its strength and power, while with a curving rush like that of a skater, it turns when forced, rising, imparting to the line and rod a strange quiver, then hurling itself into the air again. No true angler ever took so fine a fish without regret, and many a one is released as a sop to the angler's conscience.

But this fish is too large for this, and comes to the net ever fighting in the open, a five-pounder to an ounce. The boatman circles the rock and again the reel sings loudly; two more bass pay for their temerity, and we row down by a little island topped with trees, through which glimpses of green meadows are had, and graceful towers; now by an island so small that the cottage and boathouse almost cover it, and from whose window a voice bids us come ashore; and here, in the channel comes the event of this happy day.

We had decided to row in and pass the time of day and fill our friend with envy with a display of our large bass. My friend's minnow was coming rapidly up when something stopped it, and with a fierce rush the delicate line melted away, the rod caracoling, leaping, springing back, to lunge again, a rod gone crazy.

"Pickerel!" gasped the astonished angler.

"Muskallunge I think, sir," retorted Bill, excited but not showing it. He whirled the boat around stern to the game, then rushed her backward at full speed to save the line that

bade fair to part company with the spool. Ah, the joy of this fierce thrill! this could be but one fish; the splendor of it! as far away something threw its tail in air, lashed the water, leaped high into the air, then plunged into the heart of the river, deep into the regions of despair, as were there not submerged rocks and roots and diverse things which might end this contest.

But the fates were kind; the fish, the muskallunge and nothing else, merely sulked, plunged and held its own until the boat was fairly over it, then started, shot to the surface, plunged to one side, stopped like an angry steer and took its head. Ye gods and little fishes! how it fought, this cousin german of the despised pickerel, this kinsman of the pike, that has been known to jump into the boat of an anxious angler.

Now darting down, coming up hard on the reel, trying to circle the boat, keeping the delicate rod bowed to the danger point, this game fish fought minute by minute, until twenty or more had slipped away, and still it was yards distant, ten feet below the surface garnering its second wind, while our friend of the island pranced along the rocky shore, shouting advice which was chiefly of the "Sock it to him!" variety. In truth, the muskallunge was reversing things, was playing the fisherman who, strive as he might, could hardly reel the fish nearer than fifty feet. This accomplished, it would, in a side rush, take all the line gained, all because the angler used the lightest kind of a bass rod, in deference to his love for fair play to the fish.

The game was well hooked, and by rushing the boat backward some line was picked up and held, though the rod went to the danger point; then the fish in a frenzy came rushing in, and the angler held it while the man on the rock cheered and shouted that it was a fifty-pounder. Inch by inch the big fish was won and coaxed in, then it would tear off several yards, then come in again; and in this way, giving and taking, the battle was won, the fish finally losing its head,

rushing around the boat, while the angler gave it the butt savagely; then reeling for his life, he brought it fairly amidships, where the sharp gaff of the silent boatman slipped beneath its white neck and held it while it beat the water with lusty blows, and three men, one on the island, cheered insanely.

Given its quietus, the smiling Bill lifted the splendid fish, and held it that the sun might display its beauties, its tiger-like stripes, its fierce mouth and teeth, its glaring wolf-like eyes. Ah, if I could have taken it! But I had seen its capture, which was something, as a forty-two-pound muskallunge is not caught every day on the St. Lawrence, and in many seasons I never took one of this size.

I fished for days and weeks in quest of this elusive but game fish. I tried for it with gold and silver spoons, which flashed like diamonds in the deep channel near the Canada shore, but always with poor luck, until one glorious day when I hooked and landed after a spirited play a muskallunge hardly a foot in length, the dwarf of the tribe. Indeed, I believe it is still the record fish of the St. Lawrence for scurvy meanness of visage, for contemptible size; yet it was a muskallunge, and desperate, I determined to claim all the honors pertaining to such a catch.

It was the happy custom at Westminster in those days to spread out famous catches on the lawn in front of the hotel, or have them exhibited covered with water lilies, and served whole like the boar's head, with befitting ceremony. Moreover, it was the rule if any one caught a muskallunge to run up a white flag when coming into port, that the admiring and envious inhabitants might gather and see the giant and gaze enviously upon the victorious angler. So I ordered the boatman to hoist the white flag, and as the boat made the beach there was a crowd to receive us. The curious throng drew closer to see the giant yellow perch, bass, suckers, sunfish, wall-eyed pike, and then the muskallunge was laid out, the meanest, puniest fish seen on any river since

time began. For a moment they gazed upon it in silence, then turned in a body upon me, and I fled before an outraged people.

I still claim to have taken the record muskallunge in this particular section, but unless warmly pushed I never refer to its weight, which I now disclose in confidence: it was but two and three-quarter pounds! I hold the record for the smallest muskallunge ever born.

Would that I could with Macbeth

“ Pluck from the memory a rooted sorrow,
Raze out the written troubles of the brain.
And with some sweet, oblivious antidote
Cleanse the stuffed bosom of that perilous stuff
Which weighs upon the heart.”

CHAPTER XXXVI

IN THE LITTLE BROOK



LONG ago, in the old Devonian times, when life was very leisurely, all the beasts and people that there were lived in the sea together. The air was dull and murky on the land. It was so light that it gave no support to the body, and so those that ventured about in it had to lie prone on the ground all the time wherever they went. So they preferred to stay in the water, where motion is much easier. Then, too, water is so much better to breathe than air, if one has gills fitted for it. He has only to open his mouth and the water rushes in. Then he has only to shut his mouth and the water rushes out backward, bathing his gills on the way. Thus, the air dissolved in the water purifies all the little drops of blood that run up and back through the slender tubes of which the gills are made.

But in those days, besides the gills, some of the fishes of the sea had also a sac in the throat above the stomach in which they could stow away air which they took from the atmosphere itself. This served them in good stead when they were in crowded places, in which the air dissolved in the water would fail them.

And those which were so provided used to venture farther and farther out of the water, pushing their way heavily on the ground. And those which could put forth most effort survived, until at last their descendants were able to maintain themselves on the land together. These gave rise to the races of reptiles and birds and mammals, the ancestors of all the land beasts that you know, as well as men and

women, and all the monkey people. But it was very long ago when this happened, and because these ancestors came finally out of the water they have no part in the story I am trying to tell here.

Those that remained in the water grew more and more contented with their condition. Because the medium in which they lived was as heavy as their bodies, they swam without much effort, and effort not being needed, they could give their attention to moving back and forth. As there was food enough in the water, they did not need to go on land. As they did not go on land, they did not use their lungs for breathing, the air sac gradually shrank away, or was used for some other purpose, and all the parts of the body became adjusted for life in water, as those of their cousins who left the sea became fitted for the life in air. Being now fishes for good, all the progress since then has made them with each succeeding century more and more decidedly fishy.

And because they are fishes some of them are contented to live in little brooks, which would not satisfy you and me at all. But our ancestors in the early days were more ambitious, and by struggle and effort won what seems to us a larger heritage.

So it happened one spring when the ice melted out from some little brook that flows down from somebody's hills somewhere toward some river that sets toward the Mississippi, the little fishes began to run.

And first of all came the lampreys, but they hardly count as fishes, for they have yet to learn the first principles of fishiness. A fish is a creature whose arms and legs are developed as fins, having cartilaginous rays spreading out fan-like to form an oar for swimming. But the lamprey has no trace of arm or leg, not even a bone or cartilage hidden under the skin. And its ancestors never had any limbs at all, for the earliest lamprey embryo shows no traces of them. If the ancestors ever had limbs, the de-

scendants would never quite forget it. Some little trace would be kept by the clinging force of heredity, and at some time or another this rudiment would appear. And the lower jaw too, for that is really another pair of limbs joined together in front—as it were, a pair of short hands clasped together and never unlocked.

But though the lampreys have no limbs and no jaws and are not real fishes anyhow, they do not know the difference, and come up the brook in the spring, rushing up the rapids, swirling about in the eddies, just as if they were real fishes and owned the brook themselves. They are long, slender and slippery, shaped like eels, without any scales and with only a little fin, and that along the back and tail, an outgrowth from the vertebral column.

The vertebral column itself is limp and soft, the vertebræ only imperfectly formed and made of soft cartilage. In front the lamprey seems to be cut off short, but if we look carefully we see that the body ends in a round disk of a mouth, and that this disk is beset by rows of sharp teeth. A row of the sharpest of these is placed on the tongue, and two of these are above the gullet, for the tongue to scrape against them. And the rest are all blunt and are scattered over the surface of the mouth, which has no lips or jaws, but is surrounded by a belt of fringes.

When the lamprey is hungry he puts his mouth against the side of some fish, exhausts the water between, and then the pressure of the outside water holds him there tightly. When this is done, the fish swims away and the lamprey rides with it, giving no thought to where he is going, but all the while scraping away the flesh with his rasp-like teeth. When he has filed off enough fish flesh and sucked enough fish blood to satisfy his hunger he lets go, and goes off about his business. The fish, who does not know what hurt him, goes off to get well if he can. Usually he can not, for the water of the brook is full of the germs of little toadstool-like plants, and these fasten themselves on the

fish's wounds and make them bigger and bigger, until at last the cavity of the abdomen is pierced and little creatures of many kinds, plant and animal, go in there and plunder all this fish's internal organs, to carry them away, atom by atom, for their own purposes.

But when the lampreys come up the April brook it is not to feed on fishes, nor is it to feed at all. Nature is insistent that the race should be kept up, and every animal is compelled to attend to the needs of the species, even though it be at a sacrifice of all else. If she were not so, the earth and the seas would be depopulated, and this is a contingency which Nature would surely find intolerable. She abhors Death, as she is said to abhor a vacuum. A dead leaf could not rot, were it not that its cells are full of living creatures.

The lampreys come up the stream to spawn, and while on this errand they fasten their round mouths to stones or clods of earth, that the current may not sweep them away. When so fastened they look like some strange dark plant clinging to the bottom of the brook. When the spawning season is over some of them still remain there, forgotten by Nature, who is now busied with other things, eaten up by bacteria, and they wear their lives away still clinging—a strange, weird piece of brook-bottom scenery which touched the fancy of Thoreau.

When the young are hatched they are transparent as jelly, blind and toothless, with a mouth that seems only a slit down the front end of the body. These little creatures slip down the brook unobserved, and hide themselves in the grass and lily pads till their teeth are grown and they go about rasping the bodies of their betters, grieving the fishes who do not know how to protect themselves.

The lamprey is not a fish at all, only a wicked imitation of one which can deceive nobody. But there are fishes which are unquestionably fish—fish from gills to tail, from head to fin, and of these the little sunfish may stand first. He comes

up the brook in the spring, fresh as "coin just from the mint," finny arms and legs wide spread, his gills moving, his mouth opening and shutting rhythmically, his tail wide spread, and ready for any sudden motion for which his erratic little brain may give the order. The scales of the sunfish shine with all sorts of scarlet, blue, green and purple and golden colors. There is a black spot on his head which looks like an ear, and sometimes grows out in a long black flap, which makes the imitation still closer. There are many species of the sunfish, and there may be half a dozen of them in the same brook, but that makes no difference; for our purposes they are all one.

They lie poised in the water, with all fins spread, strutting like turkey-cocks, snapping at worms and little crustaceans and insects whose only business in the brook is that the fishes may eat them. When the time comes, the sunfish makes its nest in the fine gravel, building it with some care—for a fish. When the female has laid her eggs the male stands guard until the eggs are hatched. His sharp teeth and snappish ways, and the bigness of his appearance when the fins are all displayed, keep the little fishes away. Sometimes, in his zeal, he snaps at a hook baited with a worm. He then makes a fierce fight, and the boy who holds the rod is sure that he has a real fish this time. But when the sunfish is out of the water, strung on a willow rod, and dried in the sun, the boy sees that a very little fish can make a good deal of a fuss.

When the sunfish goes, then the catfish will follow—"a reckless, bullying set of rangers, with ever a lance at rest." The catfish belongs to an ancient type not yet fully made into a fish, and hence those whose paired fins are all properly fastened to the head, as his hinder limbs are not, hold him in well-merited scorn. He has no scales and no bright colors. His fins are small, and his head and mouth are large. Around his mouth are eight long "smellers," fleshy feelers, that he pushes out as he crawls along the bottom in

search of anything that he may eat. As he may eat anything, he always finds it. His appetite is as impartial as that of a goat. Anything, from a dead lamprey or a bunch of sunfish eggs to a piece of tomato can, is grateful to him. In each of the fins, which represent his arms, is a long, sharp bone with a slimy surface and a serrated edge. These are fastened by a ball-and-socket joint, and whenever the fish is alarmed, the bone is whirled over and set in place; then it sticks out stiffly on each side. There is another such bone in the fin on the back, and when all of these are set there is no fish that can swallow him.

When he takes the hook, which he surely will do if there is any hook to be taken, he will swallow it greedily. As he is drawn out of the water he sets his three spines, and laughs to himself as the boy pricks his fingers trying to get the hook from his stomach. This the boy is sure to do, and because the boy of the Mississippi Valley is always fishing for catfish is the reason why his fingers are always sore. The catfish is careless of the present, and sure of the future. After he is strung on a birch branch and dried in the sun and sprinkled with dust, and has had his stomach dug out to recover the hook, if he falls into the brook he will swim away. He holds no malice, and is ready to bite again at the first thing in sight.

The catfish uses his lungs as an organ of hearing. The needless lung becomes a closed sac filled with air, and commonly known as the swimming bladder. In the catfish (as in the suckers, chubs and most brook fishes) the air bladder is large, and is connected by a slender tube, the remains of the trachea, to the œsophagus. At its front it fits closely to the vertebral column. The anterior vertebræ are much enlarged, twisted together, and through them passes a chain of bones which connect with the hidden cavity of the air. The air bladder therefore assists the ear of the catfish as the tympanum and its bones assist the ear of the higher animals. An ear of this sort can carry little range of variety in sound.

It probably gives only the impression of jars or disturbances in the water.

The catfish lays her eggs on the bottom of the brook, without much care as to their location. She is not, however, indifferent to their fate, for when the little fishes are hatched she swims with them into shallow waters, brooding over them and watching them much as a hen does her chickens. In shallow ponds the young catfishes make a black cloud along the shores, and the other fishes let them alone, for their spines are sharp as needles.

Up the brooks in the spring come the suckers, large and small, coarse, harmless, stupid fishes, who have only two instincts, the one to press to the head of the stream to lay their eggs, the other to nose over the bottom of the stream wherever they go, sucking into their puckered, toothless mouths every organic thing, from water moss to carrion, which they may happen to find. They have no other habits to speak of, and when they have laid their eggs in a sandy ripple they care no more for them, but let go of life's activity and drop down the current to the river whence they came. There are black suckers and white suckers, yellow ones, brown ones, red ones and mottled, and there is more than one kind in every little brook, but one and all are harmless dolts, the prey of all larger fishes, and so full of bones that even the small boy spits them out after he has cooked them.

Then come the minnows, of all forms and sizes; the female dull colored and practical, laying her eggs automatically when she finds quiet water, and thinking no more of them afterward; the male, feeble of muscle, but resplendent in color, with head and fins painted scarlet or purple, or silver white, or inky black, according to the nature of his kind. His mouth is small and without teeth, for he feeds on creatures smaller than fishes, and his head in the spring is covered with coarse warts, nuptial ornaments, which fall off as soon as the eggs are properly disposed of. In the

little brook which comes to my mind as I write two kinds of minnows come up the stream together before the others realize that it is verily spring. The one is small, dainty, translucent and active, swimming free in the water near the surface and able to take care of itself when pursued by a sunfish or bass. Along the side of its body are two black stripes not quite parallel, and between and below them the silvery scales are flushed with fiery scarlet. The fins are all yellow, with scarlet at base, and as the male passes and re-passes before the female all these colors, which she has not, grow brighter than ever.

The next is a larger fish, clumsy in form, hugging the bottom as he swims. The whole body of the male is covered with coarse white warts, and across each fin is a bar of black, white and orange. This minnow feeds on mud, or rather on the little plants which grow in the mud, and his intestines are lengthened out proportionately. In fact, they are so long that, to find room for them, they are wound spool fashion about the air bladder in a way which happens to no other animal.

Of the other minnows, the one scares his rivals by a big, jet-black head; another by the painted fins, which shine like white satin; another by his deep-blue sheen, which is washed all over with crimson. In fact, every conceivable arrangement of bright colors can be found, if we go the country over, as the adornment of some minnow when he mates in the spring. The only exception is green, for to the fishes, as to the birds, green is not a color. It only serves to cover color, while the purpose of real color is to be seen.

And there are fishes whose colors are so placed that they are hidden from above or below, but are seen of their own kind which looks on them from the side.

The brightest fishes in the world, the "Johnny darters," are in our little brook. But if you look at them from above you will hardly see them, for they are dull olive on the back,

with dark spots and dashes like the weeds under which they lie. The male is only a little fellow, not so long as your finger, and slim for his size. He lies flat on the bottom, half hidden by a stone, around which his tail is twisted. He will stay there for hours, unseen by other fishes, except by his own kinsmen. But if you reach down to touch him with your finger he is no longer there. The tail straightens out, there is a flash of blue and scarlet, and a foot or two away he is resting quietly as before. On the bottom is his place, and he seems always at peace, but when he moves, his actions are instantaneous and as swift as possible to a creature who lives in the water. On the bottom, among the stones, the female casts her spawn. Neither she nor the male pays any further attention to it, but in the breeding season the male is painted in colors as beautiful as those of the wood warblers. When you go to the brook in the spring you will find him there, and if you can catch him and turn him over on his side you will see the colors that he shows to his mate, and which observation shows are most useful in frightening away his younger rivals. But do not hurt him. Put him back in the brook and let him paint its bottom the colors of a rainbow, a sunset or a garden of roses. All that can be done with blue, crimson and green pigments in fish ornamentation you will find in some brook in which the darters live. It is in the limestone brooks that flow into the Tennessee and Cumberland where they are found at their brightest, but the Ozark region comes in for a close second.

There will be sticklebacks in your brook, but the other fishes do not like them, for they are tough and dry of flesh, and their sharp spines make them hard to swallow and harder still to digest. They hide beneath the overhanging tufts of grass, and dart out swiftly at whatever passes by. They tear the fins of the minnows, rob the nests of the sunfish, drag out the eggs of the suckers and are busy from morn to night at whatever mischief is possible in the brook.

The male dresses in jet-black when the breeding season is on, sometimes with a further ornament of copper red, or of scarlet. The sticklebacks build their nests in which to hide their eggs, and over these the male stands guard, defending them with courage which would be dauntless in any animal more than two inches long. Very often he has to repel the attacks of the female herself, who, being relieved of all responsibility for her offspring, is prone to turn cannibal. Even the little dwellers of the brook have their own troubles and adversities and perversities.

Last of all comes the blob, or miller's thumb, who hides in darkness and picks up all that there is left. He is scaleless and slippery, large of head, plump of body and with no end of appetite. He lurks under stones when the water is cold. He is gray and greenish, like the bottom, in color. He robs the buried fish nests of eggs, swallows the young fishes, devours the dead ones and checks the undue increase of all, not forgetting his own kind. When he has done his work and the fall has come and gone, and the winter and the spring return, the brook once more fills with fishes, and there are the same kinds, with the same actions, the same ways and the same numbers, and one might think from year to year, as the sun is said to do, that these were the self-same waters and the selfsame fishes mating over and over again and feeding on the selfsame food.

But this is not so. The old stage remains, or seems to remain, but every year come new actors, and the lines which they repeat were "written for them centuries before they were born." But each generation which passes changes their lives just a little, just as the brook and the meadow itself are changing.

CHAPTER XXXVII

THE FRENZY OF UNREST



STRANGE and persistent frenzy of unrest drifts in, perhaps from the sea, in spring. It is of the things dreams are made of. Perhaps it does not come from breaking waves, but it is a part of the fragrance of spring flowers, a part of that springing into life that pervades all dormant nature in spring. Be this as it may, it fastens itself upon the imagination of the angler when the snow is still to be seen in secluded corners, and grows in intensity until May or June, when the victim, completely in the toils, throws restraint to the winds, seizes his rod and fly book, and hies him to some one of Van Dyke's "Little Rivers," where, with perfect abandon, he gives himself over to the charms and allurements of Nature.

No one has ever suggested a cure for this malady of the angler, and no one ever will, as it is the one contagion that man delights in and welcomes year by year; the one epidemic that is looked forward to in dreams and awake, the only disturbance of men that can be promptly cured, stopped and eradicated by merely going a-fishing. Philosophers from the earliest days have pondered over, and written about the charms of fishing, churchmen and housewives have denounced it, but the streams run on, their music is unabated, trout and bass still rise to flies, dry and wet, and always will, is the consolation of the devout and philosophical angler.

With unabating force and intensity this fishing fever comes on as the days roll on and the buds swell, while the songs of birds fill the air, telling of the opening season soon

to come. How the ardent angler strolls through the woods and fields days before, studying the conditions which are to make or unmake his angling joys; wonders if the water is too high, or too low, if the season has been too cold, and if some enemy of man and trout has, despite the laws, been fishing all winter.

But in time the day of days arrives, and the angler is away, all the expectations of a long winter, the longings for spring days filling his heart and soul. The air is soft, the brook sings to him in the ripples, the leaves rustle a language he understands or interprets as a welcome from Nature. There may be men who are proof against all these allurements of spring, but I do not know them, and pray that I never may; the average healthy normal man welcomes spring and goes a-fishing or afield.

I conceive myself a lucky angler to have known the forest region of New York, the Catskills and Adirondacks, before its verdure was contaminated by smoke of engine, or the timid loon demoralized by whirring propeller. When I first reached the Adirondacks at the beginning of the chain of lakes to the south, at the foot of Blue Mountain, it was like staging in Oregon to-day around the Klamath region, on the Dead Indian trail. The roads were devised for buckboards and two horses, the stumps left in the middle. Ned Buntline held forth at Blue Mountain Lake, and there was a little army of guides and woodsmen, to the manner born.

I well remember the first launch that desecrated these limpid waters, and how when it whistled to arouse the dormant echoes, the oldtimer, who resented the intrusion, came down to the shore and shook his big fists at the skipper as she went by. The inevitable had come; the lakes and forests are still there, but to wear evening attire in the big hotels among these lakes of pure delight, does not seem really fair to Nature, even to the ardent believer in the conventionalities.

The splendid forest of the Adirondack region still stands,

despite the menace of ultra-civilization, and I recall a long thirty-mile drive through a burnt area, through thousands of skeleton trees, up hill and down dale, the gradual rise, the entrance into the untouched, unspoiled forest. A black bear ambled across the road with two inquisitive cubs; the air was clear as a bell, and from far away came the deep boom of a giant frog, the cry of some strange bird. Tens of thousands of acres reached away on every side, covered with the virgin forest never perhaps profaned by the step of man; deep undergrowth, the dying trees of ages, moss-covered, their last estate hidden by groves of waving ferns and brakes, trunks colored yellow, blue and red, great lichens clinging to trees, like shelves tacked on for use.

A bend in the road, a road by courtesy, and the gem-like lake, reflecting the blue of the heavens, opens up, and we pitch down to the shore, see Jim Donnelley's smudge rising over on the south side, and are soon shaking hands with Jim himself, not a bit older than last year, the same old Jim who has been a delight-maker for scores of men and women.

Jim's windbrake, as that is what it was, was fresh as the balsam of the gods and faced a fire upon which fried trout, biscuits, bacon, coffee and venison were all cooking at the same time, a magic brew; it was then that we threw off the last vestige of civilization and entered into the full joy of the woods, filling our lungs with real air, "straight." To have sat in that smoke for ten minutes down on Manhattan Island would have been a dire penance, but now it was all right, the old crop of black flies was here to greet us, and smoke was a comfort, it was the old story; this same smoke that in the city would have been an abomination, now took on the dignity of an accessory to sport, and had to be enjoyed, and was.

What a night that was, out in the open, looking up at the stars as they came up over Blue Mountain, the air filled with incense, strange noises in the forest, strange splashes out on the lake, weird calls along shore, plunging bats, the deep

and distant vibrant *boom, boom, boom* of the frogs, the soft wind, like velvet, the drifting blue smoke from pipes, Jim's musical laugh over new stories from the big city and then sleep on green living branches, each one fragrant and life-giving!

As I awoke, the sunbeams were tipping over the Blue Mountain hills into the lake which was a sheet of glass, clear, pure and beautiful, reflecting a thousand trees in varied tints of red and yellow, green and white.

"I've been watchin' a deer swim the lake for the past half hour," said Jim as I awoke. "Instead of goin' dead across like he natchally would, he tuck it the longest way, an' I reckon he's goin' by Ned Buntline's up Eutowana way." Jim was that kind of a man, he could watch a buck swim up the lake and not take a pot shot at him, and I fancy that is why we tied up to Jim year after year. After breakfast we brought out the fishing tackle, got aboard the canoes, and started in at the real and vital object in life—trolling for trout.

The lake water was cold and pure and deep, and the minnow flashed like a meteor in its dark depths astern as I reeled out the delicate silk line. Not thirty feet had gone before the resilient rod leaped madly down, the little reel gave tongue like a hound on a fresh scent, and then, ah, the joy of it! a trout on a slack line, bear that in mind, angler, leaped madly into the sunshine that had reached the summit, and in great beams of light poured down into the serene waters of the lake, leaped and flung a cascade of glistening drops high in air and fell to dash away, making everything hum, to the laughter of Jim, who was not banking on a strike so early and so pronounced.

The trout struck not ten feet from a little island that seemed to jut out from the shore as a point, and made a savage rush to reach the intervening water where a partly submerged log bridged it with the shore; but the fates, good luck and a better split bamboo turned it just in time, stopped

it, and leaping again, it fell prone and surged bravely out into the lake, taking line in feet and yards, while Jim backed hard and sent the canoe shooting after it; then I stopped it, forced the splendid fish into the air again and took my turn for the first time, and played the reel handle to the aria of its discomfiture.

It is a weakness of anglers, of one at least, to believe that each fish is the best, and in that brief, yet ardent struggle, it seemed to me that I had never played so hard a fighter, one so deserving liberty, and had it not been the first fish of the season, a first-nighter, as it were, I might have connived at its escape.

How it plunged into deep pools it knew full well; how it bore bravely away, actually towing the stern of the canoe around as Jim sat in rapture with oars in place; how it sprang again, as though to challenge me, and circled around the boat, are but memories, yet stamped deeply on the log of memory. The three and a half-ounce bamboo was light enough for fair play, there was no question as to that, and for a while the trout toyed with it, but in the end came slowly in, fighting every inch and every inch a game fish, and when on the quarter, as I turned it, as it dashed along canted up, gleaming, flashing, eying me in disdain, to fall into the deftly handled net of my boatman, who lifted it up into the sunlight, an animated sunburst, a living tourmaline in its splendid investment of tint, hue and tone.

A colossal rainbow two feet nine inches in length, which weighed nine and three-fourths pounds when I took it from the waters of Klamath, looks down from the wall upon me as I write. It fought me half an hour on an eight-ounce rod one happy day last summer, yet the battle this three-pound trout of Blue Mountain Lake waged is most enduring, and had the big rainbow been possessed of half its spirit I should not be chronicling its defeat.

"That's the uncertainty of fishin'," said Jim. "I was goin' to take you for a sure thing about five miles up in

Raquette, but here you strike the game not a stone's throw from camp."

The big trout duly weighed and stowed away, Jim rowed away along shore and we celebrated with a cigar, and Jim being a famous Shakespearean student as well as a boatman fell to quoting.

"D'ye ye know," he said to me, "nine out of ten people get their Shakespeare and Bible mixed. Last summer two college men fell to arguing in my camp and they finally left it to me whether the line 'I go a-fishin'' was from Shakespeare or Butler's 'Hudibras,' and both turned on me when I said the Bible. The line, 'neither fish nor flesh, nor good red herring,' which you may find in Sheer's 'Satyr on the Sea Officers,' in Æneas Sylvius's 'Letter,' and Dryden's 'Epilogue to the Duke of Guise,' is always laid to Shakespeare or Bacon," and Jim stopped rowing a moment to swear gently at the Baconians.

"Shakespeare is the most apt in his reference to fishes," he continued, dropping from classical language to illiteracy, seemingly at will; "they cling to the memory. You remember in Pericles the first fisherman says, 'Master, I marvel how the fishes live in the sea'; and the second fisherman comes back at him, 'Why, as men do on land; the great ones eat up the little ones.' There's philosophy for you. See—" that instant quotations fled to the winds as my rod bent and the reel snarled viciously as a fine fish seized it and got off.

"Then in the *Tempest*," continued Jim, as he put on a fresh bait, "what more fetching line is there than a 'very ancient and fish-like smell,' as stale fish *is* ancient. Shakespeare perhaps played on the ancients for his wisdom, but he had the gift of arranging his words so that they stick in the memory. 'As he tossed over the minnow,' Hamlet says, 'A man may fish with a worm that hath eat of a king, and eat of the fish that hath fed of that worm'; and of the pictures he draws, there never was so vivid a picture of the

sea as that in Richard the Third." And Jim stopped rowing, took his cigar out and leaned forward with his eyes on the blue haze about the mountains, and quoted the well-known lines:

"O Lord! methought, what pain it was to drown!
What dreadful noise of water in mine ears!
What ugly sights of death within mine eyes!
Methought, I saw a thousand fearful wrecks;
A thousand men, that fishes gnawed upon;
Wedges of gold, great anchors, heaps of pearl,
Inestimable stones, unvalued jewels,
All scatter'd in the bottom of the sea.
Some lay in dead men's skulls; and, in those holes,
Where eyes did once inhabit, there were crept,
(As 'twere in scorn of eyes) reflecting gems."

"There's a picture for you," said the boatman, picking up his stroke; and as I sat and held the trembling rod I could not but wonder where Jim attained all his Shakespearian lore, as there was not a question relating to the Bard of Avon that he could not talk on and talk well, and to the point.

I once invited a man and a scholar to fish with Jim. I had not told him of my boatman's peculiarity, but he soon discovered it when Jim tripped him on a quotation and proved him wrong. There was a mystery about Jim. Who he was, or where he came from, I know not, nor did any one. I fancied he affected the extreme idioms of the Yankee, the droppings of "ings" to conceal the fact that he had once been a man of parts somewhere, as when he forgot himself he dropped into the air and manner that only come from association with men of ripe scholarship. Whatever it was, Jim was a man of mystery; he had left the world behind, and with the shade of William Shakespeare he had taken to the woods and left the haunts of men. Some day, I thought, some one who had known Jim in the long ago will drop into his camp, as it is practically impossible wholly to escape from the world, even in an Adirondack forest.

I was playing a trout as these thoughts passed through my mind, and Jim was back from Shakespeare, handling the oars cleverly, keeping me facing the darting fish, and then netted it in good fashion. We rowed up through the second lake, toted the canoes over the carry, and on the edge of Long Lake found a rough shanty bearing a sign "The Angler's Inn," kept by one Bill Longley, who gave us a hearty welcome. On a big piece of birchbark, nailed against the shack, was the following:

"THE ANGLER'S INN SONG.

"Bright be the board, by Friendship crown'd,
The hearth lovelights burn warm and clear;
Enough for me if there be found
The hotel's very ready cheer.
Next to that humble home endear'd
By all the toil it cost to win,
What shall we place beside or near't?
Trust me—on second thoughts—an Inn.

"I've dwelt a day in grandeur's halls,
And nights of pleasure have been mine
Within the cot's o'er-ivied walls,
As 'mid the city's gaudy shine;
But there's a charm, with home but shared,
To pride and freedom both akin—
Lord of yourself that coin's well spared
That buys and keeps it at an Inn!"

"An old chap came along here last month when I jest got the shanty up," said Bill, "and the trout, and the bacon, and the hot biscuits tuck such a holt of him that he said, seein' how I had no name for the hotel he'd name it and christen it, so he forked out five dollars and named it the 'Angler's Inn,' and writ that poetry for me and signed his name to it, 'Walter Scott.'"

Jim looked at me and winked; it was too good to explain, so we left Bill to find out from some one else that the little poem was penned far away from the North Woods by the author of "Waverley."

Mrs. Bill's hot cakes are still a chaste memory. She served them to four weary anglers under the trees, in the open air, then, seizing a colossal syrup jug, she walked around us and cried in dulcet tones, "puddle or trickle?" Trickle seemed the most alluring and I chose it, and Mrs. Bill (his fourth wife, very fat, very good-natured) turned a trickling stream of syrup on the cakes in a fanciful design, to a preternatural rag-time movement of the wrist. Jim stood out for "puddle," to discover what it was, and the lady poured the syrup on without the fanciful accompaniment, a literal puddle of sweets.

Then there were trout and venison, a woodcock, more cakes, both puddle and trickle, coffee brewed by the gods. While we were playing havoc with the table another party came in from up the lakes, and I heard Jim, amid roars of laughter, telling them how "Walter Scott" "had writ the poem only last week."

CHAPTER XXXVIII

THE UNINTELLIGENCE OF FISHES



ONE hot day I had waded out from the long dead coral barrier to some coral heads and was standing, knee-deep, with my boatman, one "Bob" of happy memory, trying to lure a big barracuda, which he told me "hung out around there."

Bob had supplied the bait with his cast-net—a living silver mullet—and with a slender line, a leader of copper wire attached to a small hook, I had ideal tackle for the game, assuming one was trying to "fish like a gentleman."

Walton said "All that be lovers of virtue . . . be quiet and go a-angling," and doubtless all gentlemen love virtue, if they do not personify it in themselves, and to angle like a gentleman is to give the fish every advantage, a sentiment, sad to relate, in which Bob had no sympathy; in fact, he had decided and emphatic adverse opinions on the subject.

I did not at first hook the big one, but a smaller fish, one of about ten pounds, and on the slender rod it gave me so splendid a battle that, having a sentimental streak in me somewhere, I began to arrive at the conclusion that so brave a fighter had the right to live to fight another day, and so forthwith began to manœuvre that it might escape, and appear to do so, owing to my lack of skill; but Bob, a keen, discerning, silent man, fell upon the scheme.

"Boss," he said, jamming his long grain pole into the sand, "I reckon you're a right smart fisherman with that toggery, but there ain't a Conch kid over yander five year ole, but kin play a barracuda better'n that. If you *want* to

git rid of him, why don't you cut the doggone line an' jes nachally get shut of him."

Bob had one weakness of the flesh, and that was for broiled barracuda, and it cut him to the quick to see a fish escape; but I was the *de facto* "boss," and as a demonstration, I reeled my game in, unhooked him, and, to Bob's absolute disgust, let him go.

"Why, that fish nachally don' know what to think, boss; look yander." Instead of dashing off, the barracuda swam slowly away for twenty feet, then turned, poised on the surface, apparently looking at us, occasionally shaking his jaw. He did this for five minutes, then slowly swam away.

"He's jest nachally 'stonished," said Bill, with a deep hurt inflexion to his voice. "Why, he's gwine to tell all the other fish. You won't even get a grunt." Nor did I, and as we moved down the reef, wading along, stumbling over the coral rocks which made up the long irregular barrier to the lagoon, Bill gave me a long dissertation, on how every fish that got away told of his experiences to every other fish, and the fishing in that locality was over for the day. Bill thoroughly believed this, and so did several of his professional friends whose life work was hauling in red groupers and other deep-sea vermin.

If this was true, it would establish an extraordinary mental standard for the fishes which, let us say quietly, are, as a rule, very stupid indeed. I think the most impossible fish I ever knew was, from a mental standpoint, almost as stupid as the average horse.

But there is something in this letting fishes go. I have often noticed that it seemed to stop the sport for a while, and after repeated watching through the crack of a float I came to the conclusion that while fishes might have a very elaborate language, the apparent cause of the trouble was, that the peculiar action and movements of an escaped fish alarmed the rest. Some followed the victim out of curiosity, and others to devour him, if he was small enough and

injured, while all the rest would drop to the bottom in alarm. Whether fishes can talk is a question which might be left for the ingenious gentleman who went to Africa and, it is alleged, shut himself in a cage, expecting to learn the language of apes, who, every one knows, can talk, at least in South America, but will not, fearing the President will put them to work building the canal.

Fishes utter sounds in the water and out and may have some method of communication. I have seen two solemn striped grunts approach each other, open their mouths, press the lips together, then back solemnly off. Whether the fish was the dentist of fishes, or merely a practising physician examining the tongue of a patient, or whether it was piscatorial osculation, I do not know, it is enough to have seen these things, let alone explaining them; but here certainly is a large and boundless field for some nature writer. Fishes have affection of a kind, as witness, the care of the young by the male. He is as solicitous and savage as the occasion requires, and displays at times intelligence of a certain kind.

The bay of Avalon, California, is the resort of many yellowtails, a large and vigorous fish, to catch which is one of the pastimes of the island, the dock always having its quota of anglers. Tossing over a bucket of sardines the yellowtails will often dash up, pick them up, one after the other, almost always avoiding the fish which is impaled on the hook. I think the fishes always see the tackle, no matter how light and delicate. If they are very hungry they rush and seize it too quickly, but it is extremely difficult to catch some old habitués of a wharf, schooled by a thousand anglers.

One day I hooked a large yellowtail which dashed directly away out to sea; when it had taken two hundred feet of line from my reel I stopped it, and the fish, realizing that I had the best of it, did a very unusual thing for a yellowtail, at least in my experience. It turned and came for me, like

an arrow from a bow, and reaching the pier upon which I was standing, dashed beneath it, secured a purchase on the line and broke it. Now this was the very thing of all others for this fish to do, its only hope of escape, and that he took it is presumptive of some intelligence; but what did this yellowtail do? In less than ten minutes he was parading up and down the pier in plain sight, towing about six feet of my line, and I could see a red blotch on his jaw which the hook had discolored. One would think that an intelligent fish possessed of any feelings of delicacy would have retired at least for the day, but you know not the yellowtail. Not he. In twenty minutes he took another hook, but this time did not go to the trouble of making a run. He took a turn around the pile, teredo-worn and jagged, and put on the requisite amount of pressure,—forty-two pounds,—broke the line and soon again appeared.

A few days later I hooked a yellowtail in perfectly clear water from the dock and succeeded in stopping it before it reached it; the fish made a lateral swing, then I saw it plunge down and deliberately wriggle under a hawser lying almost on the bottom. This was very clever, but the fish miscalculated, he fastened the line, but did not have sufficient slack to enable him to break it, so was caught, and I broke my line in trying to clear it, leaving the big twenty-five-pound fish anchored at the bottom. I determined not to desert it and sent for a boat-hook to drag up the hawser; and while I was waiting and looking down, along came another yellowtail which took its place by the side of the prisoner and seemed to be trying to aid it. Of course I knew nothing about it, but the friendly yellowtail did not leave its fish mate even when I began to work at the line with the boathook, but stood by until I hooked up the hawser and cut the fish away. There is a strong temptation to make a real "fish story" out of this. I could say that when fishing near here a week later I fell overboard, and was going down for the last time when a yellowtail of colossal proportions rose and

supported me upon its back until I was rescued. Why this fish acted thus was a puzzle, but it suddenly occurred to me to look at the yellowtail's jaw; there was my hook, the fish had remembered my kindness, and at the first opportunity had saved my life. It is a strong temptation to tell this story in this way, but I refrain, and as long as truth holds out, and fact is stranger than fiction, there is no necessity for such digression.

This act of companionship might be considered to display friendship or something of the kind, but what was really passing in that yellowtail's mind I leave the reader to judge.

I once raised a common fresh-water sunfish, which was so tame and ugly that it would follow me around the tank, and when I inserted my hand in the water would dash at it, and try to bite it. I teased the fish in this way until it became extremely sensitive, and I mention it to show that a fish can become so angry as to forget fear. One day a cat leaped upon the edge of the tank, and balancing herself, began to drink. The fish doubtless thought that the red tongue was my finger, and in a moment he had it, and the cat, amazed, frightened, uttered a frightful caterwaul, lost her balance and fell in.

In the *mêlée* of a few seconds I had visions of the tame fish dashing to the attack, game to the end, and then, a much demoralized cat rose from the water, scrambled out and ran for her life.

One might here give way to the illusive spell which seizes upon some nature writers and say that the cat, weighing eight pounds, was seized by the tongue and bodily jerked into the water by the fish which weighed four ounces; the gentle reader would not believe that; but it is extraordinary what some readers will believe, and how easy it is to make them accept it. I was once called upon in a rural community where catfish grew and prospered, to tell a fish story. I had been fishing all day and catfish were there by millions; they got most of my shrimp bait before the channel-bass for

which it was intended, so I was possibly harboring a mean spirit of revenge against all catfish and the tribe in general, and it was very natural that I should make my story bear on catfish. This was the story, which has one point of resemblance to Hawthorne's "Twice Told Tales." I told of a ranch my uncle had down on the river where the chief pastime in the cool evenings was to "jug" for cats—a high-grade and ancient species of angling much in vogue along the bayous when jugs and catfish are running in what is known as the "shank of the moon."

Everybody could catch cats but my uncle—he invariably lost his jug; and this went on until thirteen jugs (an unlucky number, note this, as it has an important bearing on the sequel) had disappeared; then a friend suggested to him that there must be a particularly big cat in his pool to carry off so many jugs; so he began to work on the problem. He sent down to Natchez and got an extra large pole, but the catfish broke it in the first run. In front of the farm was a tall Red River aspen, about eighty feet high. Uncle rigged a tackle on this and brought the top of the tree down to the water's edge, baited his large hooks, fastened the big line to the tree with a diamond hitch and arranged it so that the slightest bite would release it.

He watched it a long time, then gave it up, but in the night a mighty swish as of a rushing wind was heard, a terrific crash through the trees, and then a hissing like steam. No one dared to go out, but in the early morning the angler made an investigation and found that a catfish had struck the line and the aspen had jerked it four or five hundred yards into a thick forest of young hemlocks which had broken the fall, and the catfish wasn't hurt at all and had crawled half-way back to the water. On his way he had broken into uncle's chicken coop and had eaten four or five mandarin ducks. At this stage of the game I stopped, and by all rights some one should have smiled or expressed disbelief in some way; but nothing of the kind occurred, and

finally a man over in the corner asked "what was the heft of that cat?"

"He weighed about half a ton," I replied, "and was eighteen feet long."

"What kind of bait did your uncle use?" persisted the man.

"A whole watermelon," I replied. "He didn't need any float, as the melon floated."

"Well," said the man, "he may have cotched him that way, but I'll be derved if I believe a catfish will eat watermelon. At least I never see it done."

Fishes in running into a net will invariably become gilled. The gill net is made and its action based on the supposed stupidity of fishes. If they strike a net they push through it instead of backing out; the gill covers caught in the meshes make it hard to back out. A shark immediately rolls over and over and completes his ruin. A tuna will go through a net with such speed that he leaves a round hole. He is rarely caught. No rolling over or quitting for him, yet I saw a large tuna deliberately dash over the kelp and high above the rocks of a point at Catalina Island where it was caught. A barracuda will bite a hole just large enough for his accommodation.

Small fishes instead of scattering when attacked will almost invariably combine. I once observed a sea lion (*Zalophus*) surround a school, which it massed into a ball about six feet through of solid anchovies. The intelligent sea lion so terrified them by dashing around them that he kept them in this ball for a long time, occasionally dashing through them, and doubtless nearly exterminated the school.

The long set fyke nets are fences laid upon the plan that they lead the fish along into an inclosure. If these fishes knew enough they might turn around and find liberty, but the fyke, based upon the assumption of the fishes' lack of intelligence, is one of the most successful of all nets. All the old writers on angling, Ælian, Gesner, Rondelet, Gerard,

Silvianus, and many more refer to the intelligence of fishes, and that so many live despite a life of flight amid a thousand dangers suggests intelligence or perhaps only the good luck of anglers. For my own part I have never observed intelligence in fishes to a marked degree, though there are tales and stories without number which are supposed to prove that some fishes possess marvelous intelligence. I was told by a venerable and truthful angler (a rare combination by the way, Dr. Johnson might have said), that the original of the following story was based upon the supposed erudition of a fish. A proud father went to the pastor of a small village and told an extraordinary story of his boy: how he called the fishes of a certain pool to the edge as he would a dog, and as he played upon a reed the fishes stood upon their tails and danced in perfect time to the music. "Now, James," said the proud parent, "how do you explain that?"

"Well, if you want the truth," replied the man of God, "I should say the boy lied."

There is much cold and deliberate philosophy in this revelation, as some men lie from habit, others for the sake of lying, while many relate a story so many times that it becomes to them the truth, and they thoroughly believe it.

Speaking of prevaricating, it is rarely that the fisherman or angler will acknowledge that he is drawing the long bow as all anglers really believe the stories they tell, but occasionally a good man and true goes down, and so old Dan Costello of Puente, about two weeks before the legal trout season in Los Angeles County opened, was sitting in the breeze over the raging Rio Honda, holding a rod. As he sat there along came a man, a stranger, and the two fell into conversation.

"How's the fishin'?" asked the stranger.

"Great," replied Dan. "Yesterday I caught the limit for myself and my twin sister, with a fly, too, an' it ain't fly-time for a month."

"Perhaps you don't know me," said the stranger, throw-

ing his coat open and displaying a big badge. "I'm the deputy game-warden."

"Well, I reckon you don't know who I am," retorted Dan.

"Well, who are you?" asked the officer, taking out a little book.

"I'm the damndest liar in Los Angeles County," replied Dan.

The only occasion upon which I have been really impressed with what might be termed the intelligence of fishes, was when they are caring for their eggs and young; but all this bravery and skill comes from the strange paternal instinct, which is developed to an extraordinary degree at certain times. But under ordinary circumstances the average fish is a stupid creature. If it were not, there would not be so many fish stories.

CHAPTER XXXIX

THE SINGING FISH



HAPPENED one day, on returning from a long day's fishing, where the sport had been constant and active, to lie down flat in the bottom of the stern of the boat, which at that moment was floating over comparatively shallow water near a little rounded beach formed by a deep cañon, above which a mass of vine-like *Nereocystis*, the giant of all giant kelps, floated and coiled like snakes. There was something soothing about the murmur of the water at my ear, and at once I noticed a peculiar sound, a musical clicking, not at all like the swash of water or the ripple of waves, a clear distinct musical note which came from all about and gradually disappeared.

I raised myself up and found that the boatman had pulled off into deeper water, water deepened very quickly here; in fact a big ship could strike her bowsprit onto the rocky coast in many places and go down out of sight at their base in blue water. I told the boatman to pull back and in a few moments I could hear the strange notes again, and to be sure that it was not a vain imagining, I made the boatman listen and he too heard the sounds, and we found that they were confined to an area of about four hundred square feet, and were more intense in a certain place.

The next day I returned to the place with a friend who was more or less on familiar terms with Nature in her variety, but the dulcet notes came not, the singer was not only out of time, but out of hearing, but my companion said he had often heard it in certain shallows of San Diego Bay. "I was drifting along shore one day," he said, "very

early in the morning when I heard soft murmuring music all about me, sweet and delightful in every way. At first I thought it came from the wind, as it reminded me of an Æolian harp or something of the kind, but the shore here was devoid of everything of that kind, a barren slope; yet the notes still rose seemingly from all about, rising and falling in a most marvelous fashion. While I stood looking up and around, a Mexican stood by a boat not far away, mending nets. I pulled in and asked him if he had heard the music. '*Muy bueno*,' 'good luck,' said the man. 'Some time he sing plenty, sometime he gone.'

"'But *what*?' I queried.

"'Why, singfish, señor. I hear him plenty of time. He big mouth, sharp teeth, buttons on his jacket, all same soldier,' and the fellow laughed.

"I made him go back to the place with me and pretty soon we both heard the 'music,' which now seemed to come from a series of grunts or from all about; the combined sound sufficient to produce 'music.'

"'That fish, he sing,' said the Mexican, 'that all he good for, he sing, grunt, no good for fisherman.' Then he took one of my lines, rigged on a small hook, baited it with abalone and tossed it over and in a few moments he landed the 'singing fish' (*Porichthys notatus*), one of the most interesting of the denizens of the sea, in American waters. It was about twelve inches long, a deep bluish-brown color with a flat head and rows of shining spots, like buttons, along its belly. At first glance it looked like a catfish, and the moment it was landed it opened an enormous mouth armed with fine teeth and grunted and groaned; a grunt so deep and resonant that it was startling, a deep bass grunt not unpleasant which came from far away and had a peculiar, at least so I imagined, musical quality. I looked astonished and the Mexican laughed. 'He sing all right, *muy bueno*,' and for a few moments the singing fish wailed, groaned and grunted or croaked."

One had a large range to select from and that this was the "singing fish" there could be no question, as a large school was evidently feeding on the bottom beneath us and all were evidently making the barking sound which, in its passage up through the water, became a purely more or less musical sound.

A lady living at San Diego informed the junior author that she too had been the listener to the fish concert and to the Mexicans and Indians on the coast the fish (*Porichthys notatus*) of science, is known, among other names, as the "singing fish" and "canary bird fish." It is sometimes called "midshipman," from its rows of buttons, which are more or less luminous at night. I was fortunate in having one of these singing fishes under observation at Avalon Bay, California. The fishes were about fifteen inches long and were in a tank about three feet in length. They were of a dull slate color and periodically rose to the surface, exposing the singular silver pinhead-like spots on the lower surface which have suggested the common name of midshipman to the fish, the spots resembling buttons.

The first time I heard one of these fish "sing" I happened to be in the Aquarium building alone, and at least thirty feet from the tank. I knew that no one was about, as I had let myself in with the keeper's key to watch the wonderful light of the sea pen in the dark. Suddenly out of absolute stillness came the sound loud, penetrating and distinct, "*umph-umph-umph*." It was more than startling; then it came again and again, and creeping up to the singing fish tank, I saw it rise to the surface, and traced the sound directly to it.

How far this extraordinary "singer" could be heard I am not prepared to say, but I walked out into the yard possibly fifty feet distant, when I heard the loud vibrant "croak" which, coming up from deep water and in a volume, becomes the so-called music of the singing fish.

I experimented with the fish and found it a most interest-

ing little creature, but I could not make it utter the sounds by annoying it. It resented being touched, not displaying fear but petulance and annoyance, snapping at a stick with which I scratched its back, and displaying decided annoyance. It moved when it uttered the sound, as I observed later on, a muscular contraction or bending or lifting seemingly being necessary to the production of sound, which doubtless came from the air bladder.

What the singing fish means by uttering the sound constitutes an open question to the reader. It may be involuntary, it is not in anger, it may be a love song, or a groan of pleasure, or a croak of content like the warble of a hen on a warm, pleasant day, when her mind is at peace. Be that as it may, the singing fish produces a distinctly musical, not inharmonious sound when heard through the medium of water.

Later I saw at the Stanford Zoölogical Station at Pacific Grove, a number of the young which were being studied. They looked and acted like young tadpoles, having a striking, though, of course, superficial tadpole-like appearance.

This peculiar "canary bird fish" belongs to a singular group called toadfishes, disagreeable-appearing creatures, some of which have the faculty, like the puff shark, of blowing themselves up to an extraordinary degree. One, a common toadfish of the Florida reef (*Opranus tau*), I caught in great numbers in the opening of a moat at Fort Jefferson and frequently heard its "voice," a combination of grunt and groan, especially when the fish was taken out of the water, and that it utters a "musical" sound is shown by the experience of Captain Charles B. Hudson, who, in painting fishes at Key West far out over the water, frequently heard a musical sound like *kung kung, kung kung*. The fishermen told him that it was the voice of the *kung kung* fish, called so from the sounds it made, and later Captain Hudson placed a toadfish in a pan of water and caught it in the act of uttering the peculiar note with its musical quality.

While I cannot pretend to have devoted any especial attention to the singing fishes, it has been a part of my good luck on fishing trips to have heard a number of fishes utter sounds of various kinds, and my opinion is, that in most instances it is involuntary, though it is well to remember that this is merely an individual layman's opinion, backed by no scientific evidence.

Many of the sharks utter sounds and especially one known in California waters as the puff shark. If some of the modern nature writers had been with me when I caught my first specimen they would doubtless have interpreted its actions as a startling vocal argument in favor of immediate release, as it began, the moment my boatman lifted it in, a low but pronounced and distinct groan, the kind that would appeal to the average angler as distinctly mournful and not calculated to enhance the gaiety of the proceedings, and whether it was an appeal for liberty or not, after my boatman, a calm, silent, philosophical man, and myself had listened to it a moment, observing that the "singer" was also swallowing air and swelling up at a prodigious rate, we decided that it had earned its liberty, so we threw it back, but it was now so like a balloon that it sailed away before the wind, whirling about, calling to mind the porcupine fish of the Tropical Seas, which has a singular habit. I landed one of these fishes over two feet long once, covered with sharp spines, some of which were two inches in length, and when extended a most effective defense.

The fish had a very small mouth for a creature of its size and uttered a peculiar sucking, choking sound audible a distance of several feet. I noticed the same, or a very similar sound, possibly more of a clucking, made by a little cowfish, which was particularly helpless.

It was so tame that I caught it in my hands in a big coral head and when placed on deck it paddled its queer fins and tail in the air, rolled its eyes and clicked at us, and this too

was successful, as we put the cowfish back where *he* belonged.

Doubtless one of these days a scientist will be born who will emulate the distinguished gentleman, already referred to who, under a vow to St. Ananias, hies himself to the heart of Africa, and in a steel cage studies the language of monkeys, and we shall all see him going down in a diving bell and taking the language of fishes into a phonograph for the benefit of posterity.

It is something of a shock to discover that the "song" of fishes is produced in a very different way from ordinary everyday human song. Sorensen has shown that it comes in the toadfishes from the air bladder; certain contractions and relaxations of the muscles produce it. The same is doubtless true of many other fishes, especially those called grunts, croakers, drums and roncadores. The recent studies of Dr. R. M. Tower confirm this. There are special muscles which produce this vibration of the air bladder. In some species, only the males sing or grunt, in others, both sexes.

I have heard a peculiar sound made by a ray, and this probably proceeded from the grating of the peculiar grinding teeth in the mouth. In the Mexican Gulf a little fish known as the grunt more often entertained me by its sounds than any other fish. The moment a grunt was landed, and it was almost impossible not to catch them, they began to groan and grunt, sometimes in single notes, then in doubles or ripples of sound, and often when the grunt was very big a most extraordinary series of sounds quite irresistible to the ordinary mortal.

There are big and little "singers" among the fishes, and no one who has spent a lifetime on the Jersey coast or has been a drum fisherman will gainsay this, as the drum is the deep bass of the entire tribe. Professor Spencer F. Baird related to me a remarkable experience he had with these fishes. He had heard stories of their singing and determined

to investigate it, and was taken out by a professional fisherman, who told the story, and was well rewarded by hearing some remarkable sounds which undoubtedly came from these fishes.

I was able to demonstrate that the drum could utter sounds by watching the big fishes in a tank, and repeatedly heard the sounds. They came as deep sonorous drummings, so loud that the effect was more than startling, especially once at midnight alone in a large tank room when the sounds came booming through the air. It is thought that these fishes clap their bony shell crushers together producing the sounds, which are far from "songs." One might construe the murmur of the midshipman, the note of the gizzard shad as music, but never the ponderous booming of the drum that is said by superstitious seamen to call the long roll for those who die in the deep sea.

In the rivers and lakes of the Middle West, the freshwater drum, or thunder-pumper, groans and drums audibly in his own fashion. In fact, to do some trick or another of this sort is the privilege of nearly all members of the family of *Sciænidæ*, and many of the related groups, as the names ronco, roncador (snorer), grunt, drum, croaker, thunder-pumper, and the like clearly indicate. But none of these show songbursts as fresh and free as a canary bird, and none can compete with even the poorest of feathered singers.

CHAPTER XL

LITTLE STORIES OF STRANGE FISHES



HEN Apollon Bowedursky and Jacob Kikuchin caught their six-foot halibut off Tolstoi Head on the Island of St. Paul in the Bering Sea, they skulked stealthily home, entering the village by the back way. It was not easy to induce them to bring out their fish to have it photographed as we see it here. They didn't want Dr. Jordan to know they had it, for fear that "he would get it and put it into alcohol." But Dr. Jordan did not get the fish, for he had no cask big enough to hold it, and all he took was the picture, and some of its measurements.

The halibut is the largest of the great tribe of flounders. You will know the flounder kind from any other fish, because its head is so twisted about that both its eyes are on the same side of the head, and none at all on the other side. It swims flat with the eyed side up. That side is brown, while the under side, which lies next to the bottom, is always white. Most of the time, the flounders lie flat on the bottom, moving slowly. Most of them have large mouths with strong teeth, and are very voracious.

When a flounder is first hatched it has the head symmetrical with an eye on either side. It then swims up and down in the water like any other fish. But it soon becomes lazy and rests its breast against the bottom. Then it begins to lean over, to the one side or the other, and as it tips over the eye of the lower side begins to move forward. It passes around to the other side, little by little, across the front of the head, until it reaches its place next to the other eye.

All this is done while the little flounder is an inch or two in length.

The halibut is the largest of flounders living in the cold seas of the north, both Atlantic and Pacific. It comes down to Cape Flattery on our side and to Hakodate in Japan. In the Atlantic it reaches Cape Cod and perhaps to the coast of Brittany. It reaches a length of eight feet and a weight of hundreds of pounds. When it is found it is likely to be abundant, its favorite range being about offshore banks of no great depth. There is such a bank off the mouth of Puget Sound, where many may be taken, and north of Vancouver Island; there are numerous banks in Canadian waters, and plenty of others farther north of our own.

The halibut takes the hook cheerfully and readily with almost anything for bait. I once caught one at Karluk which had its stomach full of ham and ship's biscuit, lately thrown over from the galley. The flesh of the halibut is white and of fair quality, but like most of the flounders it is without much flavor.

Other large flounders are sometimes wrongly called halibut. But the true halibut will be known from its concave tail, the middle rays being the shortest. Its eyes are also always on the right side.

Our Monterey halibut, or bastard halibut, is a big fish too, but seldom exceeds three feet in length. It ranges much farther south, and in case of doubt, it may be known from true halibut by the form of its tail, which is double concave, the middle rays as well as the outer ones being lengthened. In the halibut the tail has a regular moon-shaped curve behind. In the "Monterey halibut" the eyes are normally on the left side, but very often on the right, a piece of carelessness which is very unusual in the making of flounders.

Almost all other kinds are either right- or left-eyed, always the same, whichever way it may be.

The porcupine fish lives in all warm seas, the whole world around. It reaches a length of about two feet when fully

grown. It is almost spherical in shape, is enveloped in a hard, bony covering, and this again is protected by long spines, so that it looks like an animated pin-cushion.

It is a degenerate fish. By that we mean that it is fitted for a narrower field of life than its ancestors. It is less active, less competent, can do fewer things. It is at the same time highly specialized; that is, fitted for very special purposes. And these purposes are all of the nature of defense against other fishes. Its cumbersome suit of mail serves for defense only. Other fishes cannot crush it. Its sharp spines protect it thoroughly. Other fishes cannot swallow it. The very short tail and small fins are defensive. Other fishes cannot bite them off. Even the small mouth of the porcupine fish is made just as harmless to other fishes as it could well be. Each jaw is like a parrot's beak or still more like a turtle's, and all the teeth in each jaw are grown together into one, and this one is blunt-edged, and very much contracted. If you put your finger in it, the fish can give you a good bite, but it cannot reach out after anything, nor hold anything that tries to get away. Little crabs and snails it can hold, and on these it feeds.

Even the flesh of the porcupine fish, thin and dry as it seems, is fitted up for its protection. Whatever may devour a porcupine fish will never touch another. In its substance are bitter alkaloids, something remotely like strychnine in taste and in effect. They poison other fishes. They may even poison man, if eaten in some quantity. The flesh of the porcupine fish, as of numerous related species, causes the disease in the tropics called ciguatera. This is often fatal, and shows itself in severe nervous disturbances and violent irritation of the alimentary canal. These poisonous, bitter alkaloids are common in some kinds of fishes in the tropics, but do not develop in cold waters. For this reason ciguatera is a disease of the torrid zone only.

The purpose of these alkaloids in the flesh is thought to be the protection of the species. The individual eating is

sacrificed for the purpose of destroying the enemies of the race. And when men and fishes know how the porcupine fish tastes, they are ready to let it alone.

A curious defensive habit is possessed by the porcupine fish and its relatives. When caught or even disturbed it will come to the surface and gulp air into its distensible stomach till it has become twice its natural size. It then floats belly upward on the surface, securely protected against any fish, though the small boy can dip it up with his hat.

And so, floating belly upward, like a great prickly bladder, we will leave it, till it gets over its scare, opens its mouth, lets out the air, lets in the water and swims away.

Sullen, sluggish and slow, the buffalo sculpin goes nosing about on the bottom of the California bays, snapping up crabs and snails and for the rest filling its stomach with salad ribbons of green seaweed. It is a blundering sort of fish with unsocial disposition, and whenever it is disturbed it shows its wrath by flattening its head and erecting the long spines on its gill covers. When these are set no enemy has a mouth wide enough to swallow it.

The buffalo sculpin is dull green in color, with darker mottlings. It reaches a length of about fifteen inches. It is always glad of a chance to take a hook, and about Puget Sound, where it is most common, every boy's string is sure to contain at least one of them.

They are not worth much as food. The flesh is coarse and tough, and when the head and the thick skin are taken off there isn't much left of the fish.

Like most other sculpins, the buffalo sculpin has no scales, but on its side is a row of bony plates covered by the skin. All sculpins have thorns or spines on the head, and across the cheek is a bone which runs obliquely back from the eye under the skin; all sculpins have this bone and it is their characteristic mark—the thing that makes them sculpins. Of the fishes of this family there are nearly two hundred kinds, and they live in all rivers and seas of the north. The

tribe seems to have had its origin in Bering Sea, and from these waters they spread in every direction, into the streams, up to the Arctic and down into the ocean depths, and there are many other kinds in California.

One of the strangest of the sharks is the little swell shark of the coast of Southern California. It reaches a length of about three feet, is spotted with black, like the cat sharks or roussettes of southern Europe, to which fishes it bears a close resemblance.

Its head is very broad and rounded in outline. Its mouth is small, with small but very sharp teeth. It lives near shore, and is sluggish of movement for a shark, feeding on crabs and sardines when it can get them. It has no particular value to anybody, not even for the oil in its liver. It is mainly interesting for its trick of swelling up the body like a globe fish or a porcupine fish when it is disturbed. If it is irritated or frightened it comes to the surface and gulps air until it is almost as round as a ball. Then it floats, belly upward, on the water and is safe from all harm, so far as fishes are concerned. But it offers a tempting mark for the spear. And if a hole is punctured into it and the air let out, it looks as foolish as a fish can look as it sneaks away.

But if it lives the next chance it has it will do the same thing again.

The thresher shark, also called fox shark and swingle-tail, lives in all warm seas the world over, and being a wise shark, often comes to the shores of Southern California. It reaches a length of twelve to fifteen feet. Its head is small, with a short nose, and its teeth are small and sharp. Its most striking quality is its great length of tail, the long flail-like upper lobe being almost as long as the rest of the body. It is a swift shark, rather active and destructive to small fishes, but it gets a good deal of credit for actions it never performs.

Sometimes a whale is seen in great agony off the coast,



A TUNA CARRYING JIM GARDNER UNDER WATER.

See page 255.

rolling and pitching and splashing, with some monster attached to its side. It is commonly believed that it is the thresher shark which is responsible for all this, and one of the current tales in fish mythology is the one that describes the thresher and the swordfish hunting whales together. The thresher is supposed to fasten itself on the whale and flail him to death with his great tail, while the swordfish pricks him with his spear from below. Sometimes in these stories the saw-fish is also introduced—a harmless creature that never ventures out into the open where whales are found.

In all these stories, there is this much of truth: The great killer, orca, itself a sort of whale, and the most greedy of beasts, attacks its larger brethren, biting out large masses of flesh. Several of them may attack a whale together. The whale rolls over and over, sometimes taking the killers with it through the air. This I have twice seen off the coast of Lower California. It is the killer which is mistaken for the thresher. There is no evidence that the thresher ever attacks whales or man or any large animals. As to the swordfish, I am not so sure, but I doubt if it ever disturbs the whales, and it certainly has no grudge against them. The sawfish kills nothing bigger than a sardine, and while it is unfortunate to spoil a fish story, it is sometimes well to do it in order to tell a better one.

The hagfish or slime-eel looks very much like a lamprey, which is indeed its nearest neighbor in the system of classification. It is long, slim, cylindrical, worm-shaped, without limbs and without jaws, without eyes and without scales. Its skin is loose, like a scarf, and its surface is covered with slime. The different species live in the cold seas, Arctic and Antarctic, and some of them go down to great depths.

One species is common along the coast of California and is abundant in Monterey Bay. To this point naturalists from the east and from Europe have sometimes come to the Hopkins Seaside Laboratory of Stanford for the special

purpose of studying its structure and development. It lays its large egg, inclosed in a flattish egg-case, on the bottom of the sea. To each end of the egg are attached barbed threads which serve to anchor the eggs to the bottom of the sea. Curiously enough, the male fish at once proceeds to devour these eggs wherever he can find them. For a long time all the eggs which were secured were found in the stomachs of the male fish.

The hagfish is the only fish which lives wholly as a parasite. It fastens itself to the throat or eye or other soft place of a large fish; with the knife-like hooked teeth on its tongue it rasps a hole into the muscles of the fish. It then proceeds to devour the great lateral muscles which constitute the great part of the flesh of the fish, always avoiding the nerves and never breaking through into the body cavity itself. I have seen large fishes still alive with half their weight gone, living husks, floating about in the sea. When one of these husks is lifted from the water, the hagfishes inside of it slip out almost instantly and hide themselves in the sea. The hagfishes are especially likely to attack fishes held in the gill nets, and in this way they do considerable injury.

They were hated of the fishermen until Pacific Grove was made the seat of a scientific station, and scientific men as George Clinton Price, Bashford Dean, Franz Döflein and Howard Ayres, ready to pay more for these slimy, repulsive creatures than good fishes are worth. Now the pursuit of the hagfish at Pacific Grove has become something of an industry of itself.

The California hagfish is plum-color or purplish, and on the sides of its neck it has about ten gill holes, instead of seven, found in lampreys. Other hagfishes, similar in character, are found in Chili, Japan and New Zealand. At the present time there is a beautiful pink hagfish in the Avalon Aquarium.

The present species was named by Lockington in 1879,

for the late Dr. A. B. Stout in San Francisco. Dr. Stout gave an address in the Academy of Sciences against the practice of naming the animals and plants in honor of men. In response to this, this fish, hitherto unknown, was named Stouti. It is now one of the names noted in science, for anatomy of low and degraded forms of this sort possesses a special interest to scientific men. By the study of such forms we get the key to the understanding of the complex structures of the higher forms.

One of the common food fishes of the markets of Southern California is the roncador, which its discoverer, Dr. Steindachner, named for the well-known California naturalist, Robert E. C. Stearns. It is a large gray fish, with firm scales, and from other familiar fishes it is at once distinguished by a large black spot in the axil of the pectoral fin. It is a good food fish, sometimes taken with a hook, more often with the seine on sandy beaches.

The Spanish name roncador, from roncar to make a rough noise, like the English names croker and grunt, is given to numerous fishes of this tribe on account of the noise they make in the water. The air-bladder is large and of several parts, and it is supposed that this noise is made by forcing air from one compartment to another. But this has not been certainly proved. In the California roncador the throat teeth or pharyngeals are very large, suitable for crushing crabs and snails. At least part of the noise is produced by the grating of these sets of teeth one upon another. Numerous fishes of similar character are found in Southern California, and still more in Mexico. All of them make some sort of a noise, and all are good as food, some of them most excellent.

Under the flat, shelving rocks at the end of Point Loma, near San Diego, lives the most singular of all fishes. It is about two inches long, sleek, smooth and plump, light pink in color, and with a sucking disk composed of the united ventral fins. By this it fastens itself to the dark side of

the rock, lying there patiently in wait for minute crabs and shrimps, and thoroughly protected from all of its enemies.

Its most curious trait is the fact that it is blind. The young ones have small eyes, but with age they fail to develop, and when the animal is full grown only the rudiments are left, half covered by the skin.

Because it does not move about, its fins have become degenerate, and it does not need eyes to see where to go. Because it hides in dark crevices it has no use for eyes, and by the same process which has caused the blind fishes of the Mammoth Cave to lose their eyes these little fishes have also gone blind.

But it is not yet very clear what this process is. We know that without need for eyes, eyes do not develop. We know that the young have eyes, and with the disuse of eyes in the individual, the species also loses it.

As to this there are two theories, and the final cause is not yet known. It is urged by some that the results of disuse are inherited, and that because the old blind fish let their eyes lapse, the young are born with eyes defective.

According to the other theory, the whole matter is regulated by the survival of the fittest. Where a fish lives in the dark, the one which cannot see is the best fitted to survive. This theory applies to all cases of degeneration, and on the whole it seems most tenable, as we have no certain knowledge that results of use or disuse ever become hereditary. It is often loosely said that my grandfather's environment is my heredity, but we have no certain knowledge that such is ever the case, either with men or fishes.

The blind goby is most abundant at Point Loma, but it has been lately brought alive to Stanford University from Dead Man's Island, near San Pedro.

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